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Donna Creek Forestry/Biodiversity Project: Stubs, Residual Islands and Other Habitat Characteristics, 1992-1996

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ABSTRACT

The Donna Creek Forestry/Biodiversity Project was initiated in 1990 to develop and test alternative timber-harvesting techniques designed to benefit tree-cavity-using birds and mammals. This report documents the exact locations and characteristics of the stubs and residual tree islands, as well as other physical and vegetative characteristics of the Donna Creek experimental and control areas so that the data can be used for long-term comparisons and for correlation with animal use of the stub (3-m high stump), tree island and other habitat elements.

Each of the 3 experimental cutblocks (Blocks 5516, 5546 and 5547) was divided into 4 treatment units (clearcut, stub, tree island, and stub-and-island) averaging 26.9 ha in size. Within the stubbed treatment units, stubs were left in both a dispersed fashion (throughout the harvested portion of the cutblock) and in a somewhat clumped manner (around the perimeter of tree islands). The mean dispersed-stub densities ranged from 4.7 to 9.5 stubs/ha, within the prescribed 5-10 stubs/ha set out for the project. Perimeter-stub densities averaged 45.3 stubs per tree island. The mean size for 21 of the 22 tree islands (residual patches of forest) was 0.26 ha, which was very close to the prescribed target of 0.25 ha. This mean excluded the single 1.4-ha tree island that was created because of slope stability concerns. The prescribed ratio of 0.25 ha of tree island for every 8 ha of harvested area (i.e., 3.1%) was only slightly exceeded as the actual area occupied by tree islands was 3.5% (excluding the unit with the large tree island).

The 20% sample of stubs (N = 316) which were assessed for stem decay were found to be a representative sample of the stub population. Sixty-one percent of stubs had sound sapwood, 36% had spongy sapwood and only 3% had soft sapwood, with no differences between stem species. Thirty-eight percent of stubs had sound heartwood, 53% had spongy heartwood and only 9% had soft or very soft heartwood. Lodgepole pine stubs were more likely to have sound heartwood (54%) than spruce or balsam stubs. There was a much higher proportion of woodpecker feeding sign on balsam (62%) and spruce (49%) stubs than on pine stubs (13%). Seven bird-excavated cavities were found in the 316 decay-assessed stubs, but only 9 were found in the other 1,214 tagged stubs, indicating that cavities were possibly more likely to be discovered in stubs with a thorough examination than with cursory inspections.

Retention (survivorship) rates from 1992 to 1996 for dispersed stubs created by a feller-buncher in Block 5547 was 99% for stubs that were created from live trees, but only 67-80% for stubs that were already dead and had their tops broken-off (not cut) prior to or during

logging . Retention rates of stems in tree islands differed depending on the amount of pre-1992 blowdown in each tree island, except for perimeter stubs. Based on 4 tree islands in Block 5547, 1992-1996 retention rates for perimeter stubs was 99%, live trees was 56-76%, and snags was 42-60%.

Recommendations are presented that would make field data collection, data entry and data analysis more efficient in the future. The priority and purpose of collecting any non-wildlife data needs to be assessed before it is collected in the future for possible correlation with wildlife data. Fallover rates in previously unsurveyed tree islands should be estimated for correlation with wildlife use.

Maps illustrating the 3 experimental cutblocks and their associated features, as well as the 3 clearcut control cutblocks and 3 old-growth control areas, are provided. Appendices also provide the locations of all GPS-traversed point-features plus the characteristics of all other features that have been tagged as part of this project.

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1.0 INTRODUCTION

The Donna Creek Forestry/Biodiversity Project was initiated in 1990 as a cooperative venture of the Peace/Williston Fish and Wildlife Compensation Program and Fletcher Challenge Canada Ltd. (now Slocan Forest Products Ltd.). The aim of the project is to develop and test alternative timber-harvesting techniques designed to benefit tree-cavity-using birds and mammals. Animals that use tree cavities as secure places for nests or for giving birth, or at other times for resting or roosting, are at risk in the managed forest because conventional clearcutting methods typically remove all standing tree stems, both live trees and dead standing trees (snags). In addition, Worker's Compensation Board regulations prohibited the maintenance of any standing diseased or dead trees taller than 3 m on worksites (Backhouse 1993). This project was designed to test whether creating 3-m high stumps (stubs) and retaining small residual forest patches (tree islands) during clearcutting would benefit cavity-using animals. Similar research, published only after this project was already underway, has shown that stubs can be useful to some cavity-nesting animals in clearcut areas (e.g., Morrison 1992, Bennett 1994, Harris 1996), as can residual tree islands (e.g., Gyug and Bennett 1996, Merrill et al. 1998, Schieck and Hobson 2000). However, the goal of this project is also to examine the long-term benefits or effects of both stubs and tree islands on cavity-using animals, and to look closely at the characteristics and locations of these features that make them useful to those animals. Annual and other reports detailing the initiation and first phases of this project are available (Dawson et al. 1992, Murray 1992a, Murray 1992b, Wood 1992, Wood 1994, Wood 1995, Gyug and Summers 1995, Gyug 1997, Corbould and Hengeveld 1998, Joy and van den Driessche 1995 and 1998).

Within the Donna Creek project, the goal of this report was to document the characteristics and exact locations of the stubs and residual tree islands as well as other physical and vegetative characteristics of the Donna Creek study area. This report provides the details on the physical setting and the habitat that complements the reports on breeding birds (Gyug 1997), cavity-nesting birds (Gyug 2002) and furbearers (Corbould and Hengeveld 1998) within the Donna Creek project. Describing the residual habitat features within the study area began in 1992 with counts and assessments of stubs, residual trees and other stems in Block 5547 (Murray 1992a, b). The process continued in 1996 when PWFWCP contractors and biologists assessed stubs within all 3 experimental cutblocks (including a 20% sample for decay characteristics); recorded the exact locations of all stubs, point-count stations and other point-features in the project area; and traversed all the residual tree island boundaries and other main line-features (e.g., creeks) in the project area; this work included reassessing

those stubs and residual trees in Block 5547 that were marked in 1992. This report provides the details of the work conducted in 1996, thus clearly outlining the format and scope of that data so that it can be used for long-term comparisons and for correlation with animal use of the stubs and other habitat elements or habitat features in the cutblocks within the Donna Creek project area.

1.1 Objectives

Specific objectives for this report were to:

1. Summarize physical characteristics and timber harvest and silviculture histories of experimental cutblocks, control cutblocks and control old-growth forest areas,

2. Provide more accurate estimates of cutblock, treatment, and residual tree island areas based on Global Positioning System (GPS)-traverse survey data,

3. Document more accurate abundance and density estimates for stubs based on GPS-traverse survey data,

4. Document characteristics of retained stubs,

5. Calculate fallover rates of dispersed stubs, and perimeter stubs, snags and trees in select residual tree islands, in Block 5547 from 1992 to 1996, and

6. Document physical, vegetative and structural characteristics surrounding point-count stations within the treatment and control areas.

2.0 STUDY AREA

The Donna Creek study area is located at the south end of the Wolverine Range of the Omineca Mountains, approximately 80 km northwest of Mackenzie and 240 km north of Prince George, British Columbia (Figure 1). Detailed location notes and geographical descriptions of the study area are available in Dawson et al. (1992). The study area is in the Manson Plateau Ecosection of the Omineca Mountains Ecoregion of the Sub-Boreal Interior Ecoprovince.

The study plots are in the moist-very cold subzone of the Engelmann Spruce–Subalpine Fir Biogeoclimatic Zone (ESSFmv3; MacKinnon et al. 1990). This ESSF subzone is characterized by an ericaceous shrub layer, a sparse cover of herbs, and a relatively dense

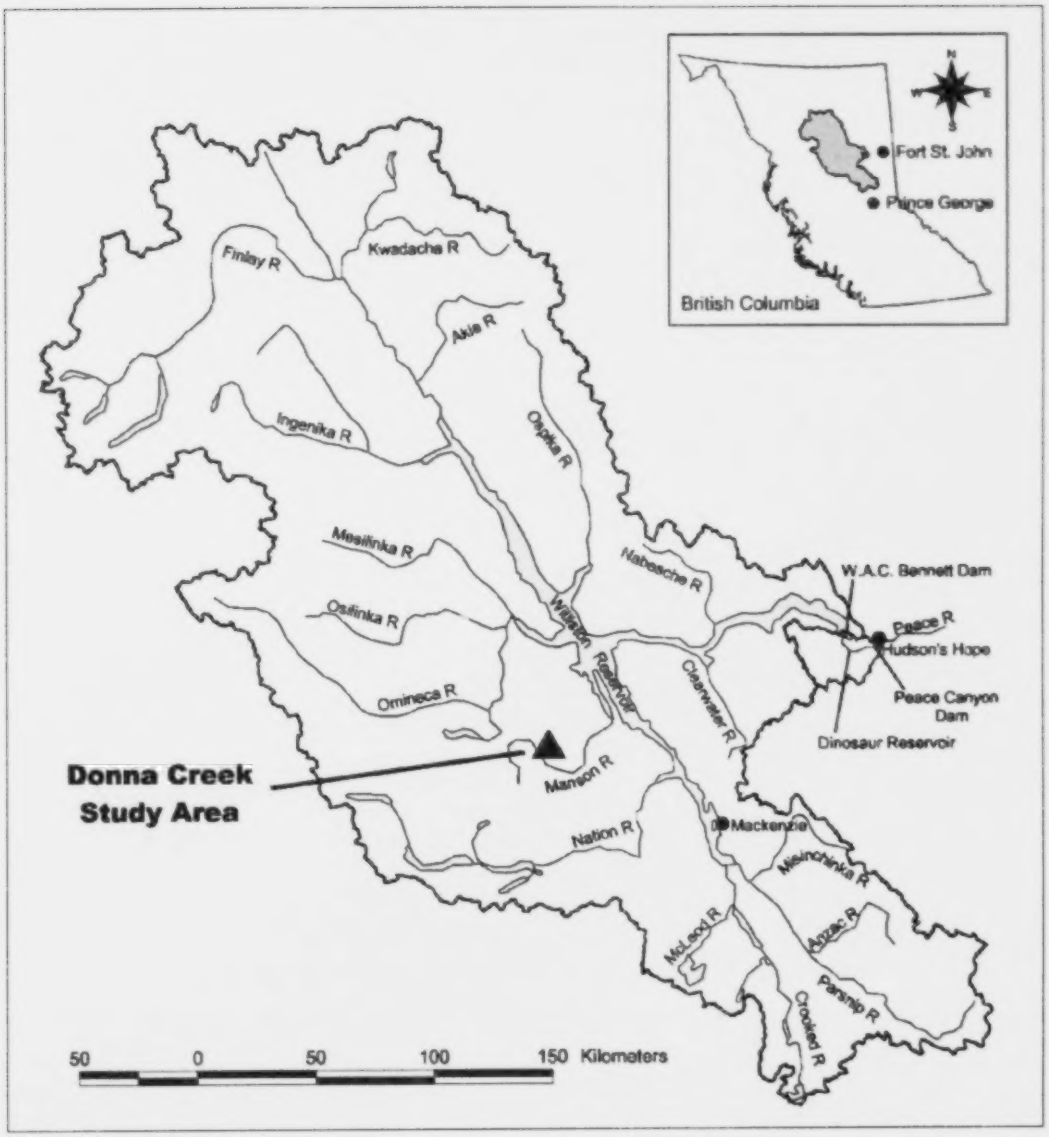

Figure 1. Location of the Donna Creek study area in the Williston Reservoir watershed, north-central British Columbia, Donna Creek Forestry/Biodiversity Project.

moss layer. Engelmann spruce (*Picea engelmannii*) and subalpine fir (*Abies lasiocarpa*) are the dominant climax tree species, with lodgepole pine (*Pinus contorta*) as a widespread seral species (Dawson et al. 1992). Throughout this report, these tree species are referred to as spruce, balsam and pine respectively. Black cottonwood (*Populus balsamifera* ssp. *trichocarpa*) was the only other tree species that had mature stems present in the study plots; this subspecies is referred to as cottonwood throughout this report. Trembling aspen (*Populus tremuloides*) also occurs in the area.

3.0 METHODS

3.1 Study Design

3.1.1 Experimental Cutblocks

The study design was a randomized block two-factor ANOVA with two levels of each between-subjects factor (i.e., a 2x2 ANOVA). The first factor was the retention of stubs (high stumps cut at a 3-m height by a feller-buncher) within the harvested area. Prescribed levels chosen were 1) absence and 2) densities of 5-10/ha (Dawson et al. 1992). The second factor was the retention of mature tree islands (patches of residual forest) within the cutblock. Prescribed levels chosen were 1)absence and 2) one tree island of about 0.25 ha for every 8 ha of harvested area (Dawson et al. 1992). A complete statistical explanation of the study design can be found in Gyug (1997). There are four possible combinations of the two experimental factors at each of two given levels. These combinations make the following four treatments:

- **Clearcut (CT):** No stubs and no tree islands present.
- **Stub (SB):** Stubs present but no tree islands present. The stubs were dispersed fairly evenly over the harvested area, and are termed dispersed stubs.
- **Tree island (TI):** Tree islands present but no dispersed stubs present. A fringe of stubs was created at the perimeter of each tree island during timber harvest, and these are termed perimeter stubs in this report. Therefore, for the most part, each tree island is also a high-density patch of stubs as well as a patch of residual forest.
- **Stub-and-Island (SI):** Dispersed stubs present throughout the harvested area and tree islands with a fringe of perimeter stubs also present.

The 3 experimental cutblocks (Blocks 5516, 5546 and 5547; see Figure 2) in the project area made for a randomized block study design with 3 replicates of each treatment. Each of the experimental cutblocks was divided into 4 sections of about 25 ha each, and one of each treatment was applied randomly in each experimental cutblock. Each of the treatments is referred to hereafter by their two-letter code (**CT**, **SB**, **TI**, or **SI**) to avoid confusion between the stub and tree island factors and the stub and tree-island treatments, a combination of different levels of the two factors. Where analyses refer separately to the tree island or harvested portions of the **TI** or **SI** units, then their respective codes **TIi** or **SIi**, and **TIh** or **SIh** are used.

To sample breeding birds, 7 point-count stations were established in the harvested portions of each of the 12 experimental treatment units (Joy and van den Driessche 1995). Stations were placed at least 100 m apart and at least 50 m from any tree island, and were placed to give relatively even coverage of each unit. Additional point-count stations were placed in each tree island, with 2 point-count stations in the largest tree island in Block 5516. The breeding bird results from these point-count stations have been reported in Gyug (1997). However, the exact locations of those points based on the GPS traverse were not reported in Gyug (1997) but are reported here.

3.1.2 Controls

To discount the possibility that "neighbour effects" of adjacent areas with stubs or tree islands were contributing to some animal use of the Clearcut Treatment (**CT**) units, cutblocks that were completely clearcut (e.g., no stubs or tree islands) were selected within the Donna Creek drainage to act as controls to the **CT** units . These control cutblocks (Blocks 5510, 5549 and 5550; see Figure 2) were termed **Clearcut Controls (CC)**. Seven breeding bird point-count stations were established in approximate 25-ha portions of each of the 3 **CC** cutblocks.

Sampling was also conducted in the old-growth forest adjacent to each of the experimental cutblocks (Blocks 5516, 5546 and 5547; see Figure 2). These were termed **Old-Growth Controls (OG).** This permitted comparisons of wildlife use in each of the 4 treatments with the mean use in the old-growth forest. In each **OG** area, 7 breeding bird point-count stations were established in a single line at intervals of about 175 m between each other, and at least 100 m away from any cutblock. The **OG** area for Block 5516 (**OG1**) was southwest and adjacent to Block 5516. The **OG** for Block 5547 (**OG3**) was northwest and adjacent to Block 5547. The **OG** for Block 5546 (**OG2**), however, was in the 400-m wide strip of forest

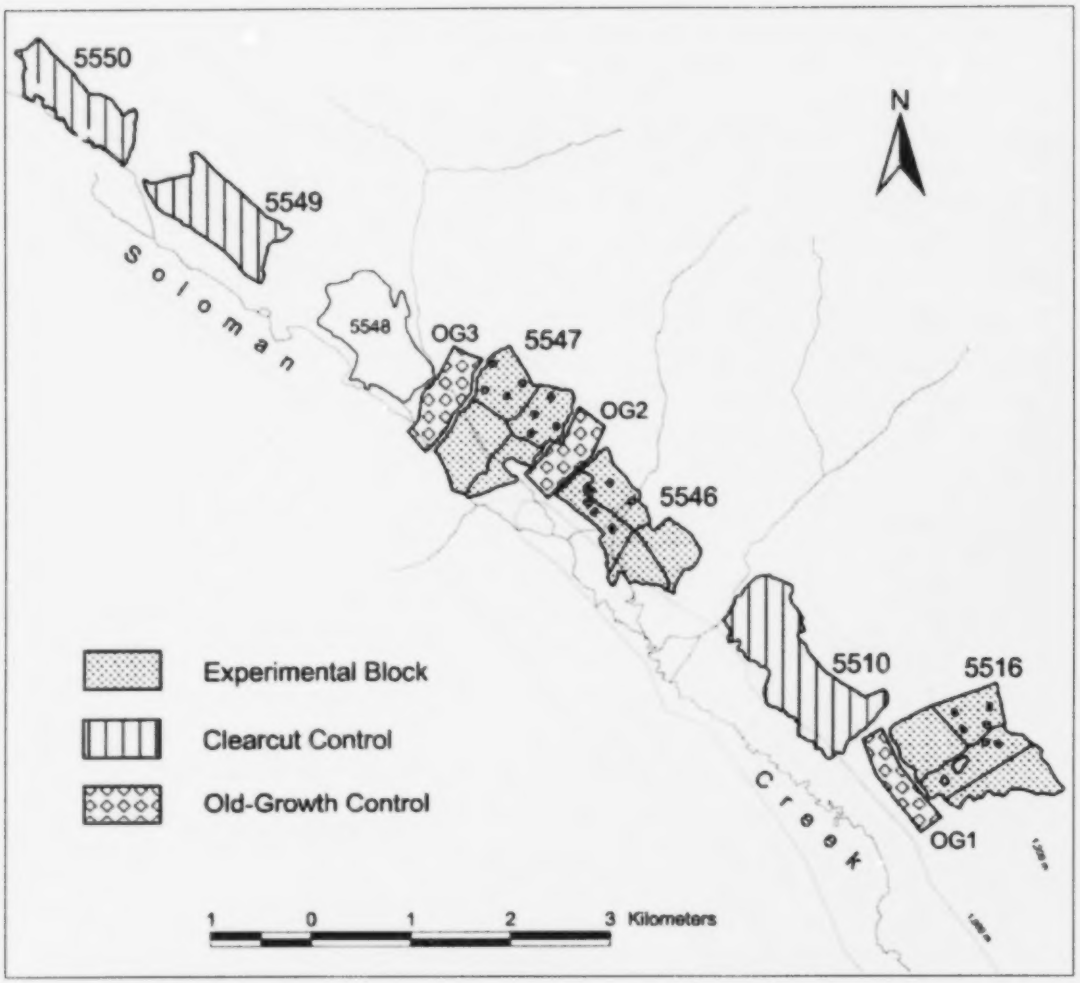

Figure 2. Locations and arrangement of experimental cutblocks (Blocks 5516, 5546 and 5547), Clearcut Control cutblocks (Blocks 5510, 5549 and 5550) and the Old-Growth Control areas (OG1, OG2 and OG3) within the Donna Creek study area, Donna Creek Forestry/Biodiversity Project, 1996.

between Blocks 5546 and 5547 (Figure 2). Two of the 7 **OG** point-count stations were equidistant between these experimental cutblocks, but the remainder were actually closer to Block 5547 than to Block 5546. Therefore, **OG** areas could not be directly entered into a 2x2 ANOVA study design that depended on blocking by replicate since **OG2** station data could just have easily represented experimental Block 5547 as 5546.

3.2 Habitat Plots

3.2.1 Data Collection

Vegetation and physical data were collected at nested plots centred on each breeding bird point-count station between 24 June and 26 July 1996. Each point-count station has been permanently marked with an angle iron driven into the ground or into a stump if there was one at the centre of the station. The angle iron at each station has been labelled with the block number, treatment unit and station number. For example, **47SI9** is Station #**9** in the Stubs-and-Islands **(SI)** treatment in Block 55**47**. The exception for this point-count station naming rule is for the **CT** treatment, which was originally named CC. Therefore both **CC** (Clearcut Controls) and **CT** (Clearcut Treatments) now have point-count stations using the **CC** lettering in the point-count station designation. The **CT** points can be distinguished from the **CC** points by the block number prefix (16, 46 and 47 for **CT**; 10, 49 and 50 for **CC**).

The data collected in an 11.3-m radius (0.04 ha) plot around each station included:

- visual estimates of percent cover (by species where possible) in 5 vertical strata following the methods in Habitat Monitoring Committee (1990):
  1. main canopy trees (>10.0-m ht.),
  2. sub-dominant trees (>10.0-m ht. but not reaching the main canopy),
  3. tall shrubs (2.0 to 10.0-m ht.),
  4. low shrubs (woody vegetation <2.0-m ht.), and
  5. surface substrate including vegetation and non-living cover, classed as Decaying Wood, Bedrock, Cobble, Mineral, Organic[1], or Water.

[1] Field surveyors collected Organic layer percentage that included both living and dead matter, rather than just soil litter and dead material as recommended by Habitat Monitoring Committee (1990).

- number, species, DBH (diameter at breast height of 1.3 m), Wildlife Tree Class (Wildlife Tree Committee of B.C. 1994) and Height Class of snags >15-cm DBH (<5 m, 5-9.9 m, 10-19.9 m, > 19.9 m),
- number of upturned root balls (by 1-m height classes),
- counts of stumps classed by DSH (diameter stump height) in clearcut areas,
- percent coverage by different soil moisture regimes (xeric to hydric, see Table 3), and
- Coarse Woody Debris (stems >7.5-cm diameter) measured along 2 right-angle 24-m transects centred on the point-count station as proposed under the Vegetation Resources Inventory (Ministry of Forests 1996). Recorded for each piece that intercepted the line was Decay Class, piece size by length class (<5 m, 5-9.9 m, 10-19.9 m, 20-29.9 m, and >29.9 m) and by diameter of largest end of piece (7.5-19.9 cm, 20-29.9 cm, 30-39.9 cm etc by 10-cm classes), and percent sound wood (Decay Class 1) of piece.

The data collected in a 50-m radius (0.785 ha) plot around each station included:

- overall slope (%),
- overall aspect (degrees),
- slope position (Valley Floor, Lower Slope, Middle Slope, Upper Slope, Ridge Crest),
- number of stubs within 25 and 50 m, including the metal tag number of each stub, and
- percent coverage by different soil moisture regimes.

Other vegetation information available included the stand and stock tables (tree densities) from pre-harvest cruise plots in the experimental cutblocks that were presented in Murray (1992b). These results were reported as aggregates for each experimental cutblock and cannot therefore be separated by the treatment units used in this study.

3.2.2 Data Analysis

The vegetation information was analysed for differences that might affect the outcome of the experiments, and is presented as a mean percentage cover for each treatment unit in each cutblock; for the **SI** and **TI** units, the tree island information (**SIi** and **TIi**) is presented separately from the harvested area information (**TIh** and **SIh**). The mean for each unit is based on the 7 point-count station plots within the unit, or fewer points for tree islands as 3 to 5 island point-count stations existed in any one unit. The analysis looked at overall means for each treatment unit or control in a one-factor ANOVA design using the mean for each unit as the data points. This contrasted **CC**, **CT**, **SB**, **TIh**, **SIh**, **TIi**, **SIi** and **OG**. This analysis would show overall trends in the vegetation. More detailed analyses were not done

or presented here since the data was primarily meant for correlation with wildlife data which is not analyzed in this report. Further analyses examining the correlation of vegetation data with breeding bird point-count data on a point-by-point basis was conducted earlier by Gyug (1997).

Species-by-species vegetation data was collected at point-count plots for trees, shrubs and herbaceous plants, but these are only presented for trees in this report. The remainder of this information is available in the digital file (see section 3.5 Data File Management) should future finer contrasts by species be desired rather than lumping species into growth-form groupings.

CWD data are presented as densities, i.e. the number of pieces per ha. No volume estimates were available from the CWD data because the diameter of each piece at the line interception point was not collected. However, since the point-count stations are permanently marked, CWD volume data could still be collected in the future if desired. Mean length, mean diameter and mean decay class of CWD were estimated for each plot. CWD data was treated as for vegetation information and analysed in the same way, i.e., the 8 treatments and controls (**CC**, **CT**, **SB**, **TIh**, **SIh**, **TIi**, **SIi** and **OG**) were contrasted in a one-factor ANOVA design.

Stub densities were calculated around each point-count station that was not in a tree island using the 50-m radius plot counts, and separately using the GPS-traversed stub location information. There were enough mismatches of numbered stubs recorded at each station during 50-m radius plot counts and the GPS-traversed stub locations that the results from each set of information have been presented separately. The ±5 m GPS location accuracy for features may not be accurate enough for this sort of detailed calculation of local stub densities.

Numbers of stubs around each tree island were enumerated. But, tree island stub densities were not calculated because stubs were only around the perimeter of the islands, were not necessarily inside the tree islands, and were not evenly dispersed. Calculating a density on the basis of a 50-m radius plot around the tree-island point-count station would have underestimated the actual stub density, and a density based on the tree-island area alone would have misrepresented the density because stubs were not necessarily inside the tree islands. Stub densities were only estimated for the tree islands in Block 5547 where stem retention (survivorship) rates were being estimated, and thus an estimate of stub density was needed to add to the live tree and snag densities in order to estimate the amount of stems

remaining from pre-logging levels. Instead, an index of perimeter-stub density was calculated by dividing the mean number of stubs per tree island by the perimeter length. The tree-island size and perimeter length were checked for correlation with the numbers of stubs around each tree island.

3.3 Stubs and Residual Trees

3.3.1 1992 - Block 5547

In 1992, all assessed stems in experimental Block 5547 were marked with a numbered metal tag (Murray 1992a). Assessed stems included all stubs -even those <15-cm DBH- within the **SB** and **SI** treatment units, including perimeter stubs around the 4 tree islands in the **SI** unit (Isl 47-5, 6, 7 and 8[2]); perimeter stubs around the tree islands in the **TI** treatment were not numbered or assessed. In addition, all trees and snags >15-cm DBH within the 4 tree islands (Isl 47-1 and 4 [**TI** unit] and Isl 47-6 and 8 [**SI** unit]) were tagged and assessed, as were any remnant, standing, mature cottonwood trees and non-merchantable conifer trees ≥15-cm DBH in the harvested areas of the **SB** and **SI** treatment units. Tag numbers used for these stems were 1 to 829.

Assessment of each stem included recording the following information:

- tag number,
- whether the tagged stem was in a tree island,
- species,
- DBH,
- height of live trees or snags,
- Wildlife Tree Class (WTC), or WTC prior to logging for stubs,
- type of stem (live tree, stub, or naturally dead snag if in tree islands),
- whether the stub was cut by machinery (i.e., a feller-buncher) or had a top that was broken off resulting in the stem having an approximate height of 3 m,
- whether the stub was considered to be already dead prior to logging, and
- whether the tagged stem contained a cavity.

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[2] The numbering of Block 5547 islands changed from the original numbering presented by Murray (1992a). All digital files and post-1992 reports use the following numbering system: current Isl 47-1 was #6, Isl 47-2 was #7, Isl 47-3 was #8, Isl 47-4 was #5, Isl 47-5 was #1, Isl 47-6 was #3, Isl 47-7 was #2, and Isl 47-8 was #4.

3.3.2 1996 - ALL BLOCKS

In 1996, the species and DBH of all stubs (including stubs <15-cm DBH) in the **SB** and **SI** units of the 3 experimental cutblocks (Blocks 5516, 5546 and 5547) were recorded. Stubs in the **TI** units (i.e., tree-island perimeter stubs) were excluded from this sample. In the case of stubs in Block 5547, these measurements were retaken, although they had already been measured in 1992. The stubs in Blocks 5516 and 5546 (excluding **TIi** perimeter stubs) were tagged. Tags numbered 1000 to 1360 were used in Block 5546 and tags numbered 1361 to 2123 were used in Block 5516.

A 20% sample of the tagged stubs in the **SB** and **SI** units was further assessed for stem decay and wildlife use characteristics. Every fifth stub encountered during the assessment phase was used; the same information was also collected at any additional stubs that were found to have a cavity. In some of the datafiles, this is referred to as the "1-in-5" sample of stubs. Data collected at each of these stubs included:

- species,
- DBH,
- Decay Stage (= Wildlife Tree Class after logging, i.e., no stubs were recorded as Class 1 or 2 Wildlife Trees since all stubs were dead, but many would have been alive before logging),
- percentage of bark remaining (<50%, 50-75% or >75%),
- root condition (1, 2, 3 or D) as follows:
  - 1 - lateral roots free from decay up to 1 m from stem
  - 2 - >75% lateral roots free from decay up to 1 m from stem
  - 3 - >50% lateral roots free from decay up to 1 m from stem
  - D - <50% lateral roots free from decay up to 1 m from stem,
- dominant heartwood condition (1, 2, 3 or D) as follows:
  - 1 - hard core (can be shaved with a pen knife)
  - 2 - spongy core (remains intact, somewhat flexible, can be shaved)
  - 3 - soft core (breaks apart, flaky)
  - D - very soft core (crumbles, powdery, unsound),
- dominant sapwood condition (1, 2 or 3) using the same characteristics as for heartwood above,
- any obvious tree defects,
- height, opening size and direction of any cavities found,
- comments on the extent and type of woodpecker feeding sign on the stub,

- any birds observed or signs of birds perching on the stubs,
- any other animal use of stub, and
- any other observations such as notes on location, insect sign or condition of branches.

3.3.3 Data Analysis

The 20% detailed assessment sample was examined against the other tagged stubs in the **SB** and **SI** units in order to ensure they were representative of all the stubs. The stubs originally included in the 20% sample comprised stubs that were <15-cm DBH, but these were dropped prior to any analysis being conducted. Chi-square tests determined if the species composition of this sample was not significantly different from the overall population of stubs, and t-tests were used within each species to see if this sample was not significantly different in DBH from the overall population.

Analyses of the 20% decay-assessed stub sample included a breakdown of heartwood and sapwood decay stages by species and DBH class. Woodpecker foraging use was examined by species and DBH class. Numbers and types of cavities or other animal dens in this sample were presented, as well as in the non-decay-assessed stub population. The data for stubs with cavities were analyzed and presented separately in Gyug (2002).

In Block 5547, almost every standing stub in the harvested portions of the treatments, or at the perimeter of the 4 tree islands in the **SI** unit (Isl 47-5, 6, 7 and 8), had been tagged in 1992. These were recounted in 1996. Any that were known to be numbered in 1992, but not found in 1996, were assumed to have fallen within that 4-year period. During GPS-traverse activities (see below), it was found that 1 stub in the **SB** unit (N = 192 stubs) had not been tagged or counted in 1992, and 5 perimeter stubs in the **SI** unit (N = 319 stubs) had not been tagged or recorded in 1992.

Similarly, the 4 islands in Block 5547 (Isl 47-1, 4, 6 and 8), where every tree and snag had been tagged in 1992, were revisited in 1996. The tag number on every standing tree or snag was recorded again and, where possible, the tag numbers on any trees or snags that had fallen were recorded. Any stem with a tag number known to be used in 1992, and not found in 1996, was presumed to have fallen. Only trees and snags ≥17.5-cm DBH were used to calculate the stem density in the islands, thus making the density comparable to the pre-logging forest composition.

Survivorship rates for standing stubs were termed "retention" rates in this report and were calculated by comparing the 1996 counts of standing stubs to the 1992 counts. Fallover (or blowdown) rates are typically used to describe short-term catastrophic forest stand events. However, the primary interest of this project is in the utility of the standing stems (stubs, trees and snags) to cavity-using animals over the long term. Survivorship rates were used because of this long-term intention to follow this group of stubs until few or none remain, or until the forest regrows around the stubs and cavities developed in the new crop of forest trees become usable by animals.

3.4 GPS Traverses

All Global Positioning System (GPS) traverses and point-feature location data were collected by Forey Management Ltd. under contract to the PWFWCP in summer 1996. Trimble ProXL receivers with Asset Surveyor CMT Data Collectors were used to collect data. All data were 3D Differentially Corrected, with level of accuracy at ±5 m. UTM coordinates and elevations were collected for any point-features that were traversed.

Cutblock and road data had already been GPS-traversed by Forey Management Ltd. under contract to Slocan Forest Products (then TimberWest Ltd.). These data were provided to the PWFWCP for this project.

Treatment unit boundaries had only been sketched onto maps at the beginning phases of this project. In 1996, some of the treatment boundaries were redefined using stub and point-count station locations. Where roads formed boundary lines, these were retained. The relatively arbitrary lines drawn between **SB** and **SI** units (since both had stubs dispersed throughout their areas) were retained. Where treatment units with stubs (**SB** and **SI**) abutted treatment units with no stubs (**CT** and **TI**), the boundary was defined as a 25-m buffer placed beyond the last outlying stubs. Where adjoining treatment units were **SI** and **TI** units, a 50-m buffer was placed from outlying point-count stations. If adjacent stub and point-count station buffers overlapped, then the 50-m station buffer was used as the determinant of the boundary; consequently, some stubs were apportioned to supposedly non-stub bearing treatments (**CT** and **TIh**).

The perimeters of all residual tree islands were GPS-traversed in 1996. Tree-island perimeters were delineated by the presence or absence of understory growth (i.e., coniferous regeneration or shrub growth) which was usually lacking from the areas that had been timber harvested and site-prepared. Thus, perimeter stubs could be situated inside or outside the

tree-island boundary since they were classified as a perimeter stub as long as they were not situated more than 5 m into the harvested area.

In the experimental and control blocks, all stubs (including **TI** perimeter stubs), mature cottonwood trees, clumped alder and immature conifer tree (<15-cm DBH) patches, and streams within and adjacent to the study cutblocks were GPS-traversed. The trees and snags in the residual tree islands were not GPS-traversed. In some instances when multiple stubs were in close proximity to one another (e.g., <2 m), one location was taken for the group. Co-ordinates for individual stubs were later arbitrarily derived by positioning them within about a 1 to 2-m radius of the collected location; the same elevation was used for all stubs from the same group. Detailed cutblock maps, using Microstation, were created by the contractor and provided to the PWFWCP.

TI perimeter stubs were not tagged in the field by the stub assessment crew, but were traversed by the GPS crew. Consequently, these stubs had location co-ordinates but no tag numbers. Similarly, GPS-traversed stubs not originally identified in the SB and SI units of Block 5547 in 1992 (see section 3.3.2 above) and others missed by the stub assessment crew in the other study cutblocks were also numberless. These stubs were later assigned a number (but not tagged) and are now listed in the data and GIS files as the NN (No Number) series from NN1 to NN490. This number series only contains 481 actual stems since there was some overlap of these numbers with the tagged numbers in Block 5547 due to the GPS crew not noticing the tag (e.g., NN321 was actually previously tagged as 776). No measurements except location and elevation were recorded for these NN stubs by the GPS crew. However, because it was unknown if all these NN stubs were >15-cm DBH, PWFWCP staff and contractors went back to the field to confirm if these stubs were < or ≥15-cm DBH. Species, DBH and whether the stub was cut by feller-buncher or had its top broken off was only collected at 35 of these NN stubs. Data from these 35 stubs were not included in any analysis unless the stub was ≥15-cm DBH.

3.5 Data File Management

Detailed lists of all numbered point-features (stubs, cottonwood trees, alder or immature conifer patches, and point-count stations) with a GPS location are provided in Appendix A through G. Below is a list of the data filenames where the information in this report resides:

1. Characteristics of stubs, snags and trees in the 3 experimental cutblocks (Blocks 5516, 5546 and 5547):

   - ***Stubs_final.xls*** General info on all stubs tagged and identified.
   - ***Decay_assessed_stubs_final.xls*** 1996 decay assessments of 20% sample of tagged stubs.
   - ***Block_5547_final.xls*** The originally numbered stubs, trees and snags of Block 5547 in 1992, as well as the list of stubs found in 1996.

2. Physical and vegetation attributes of the study area that were collected at point-count stations are contained in the following 4 files:

   - ***Physdata.xls***
   - ***Cwd_data.xls***
   - ***Snagdata.xls***
   - ***Veg_data.xls***

3. While the raw data resides in the files named in the 2 preceding bullets, files were developed that manipulated the data into formats suitable for analysis. To avoid having to re-manipulate the same raw data for future analyses, these files have been submitted to the PWFWCP along with this final report under the following names:

   - ***1-in-5 Decay Analysis.xls***
   - ***Cwd_Analysis.xls***
   - ***Final_Stub_Densities.xls***
   - ***Island_Perimeter_Stubs.xls***
   - ***Physdata_Analysis.xls***
   - ***Final_Veg_Data.xls***

4. The GIS files are maintained in the MWLAP/MSRM data warehouse in Prince George under the following file names:

   - **astubs_dcrk** Any features that can be defined by points and for which GPS-traversed location data was collected, including stubs, cottonwood trees, alder and conifer regeneration patches, and point-count stations.
   - **acutblk_dcrk** Block, treatment and tree-island boundaries.
   - **atrn_dcrk** Roads including landings in some of the cutblocks
   - **awtr_dcrk** Water features, i.e., streams and lakes, in or adjacent to the study cutblocks.

4.0 RESULTS and DISCUSSION

4.1 Physical Setting, Forest Types Prior to Logging and Harvest Characteristics

All study areas (experimental and control cutblocks and old-growth forest areas) are situated along the northeast side of Soloman Creek (Figure 2), the main tributary of Donna Creek in the ESSFmv3. Three experimental cutblocks (Cutting Permit 371, Block 5516, and C.P. 373, Blocks 5546 and 5547) and 3 control cutblocks (C.P. 371, Block 5510, and C.P. 381, Blocks 5549 and 5550) were chosen for this study; one old-growth control area was also selected adjacent to each experimental cutblock. When Block 5516 was not going to be harvested as originally scheduled, Block 5548 was identified as the third experimental cutblock in the study. However, when broadcast burning was required to remove the high slash loading following logging, Block 5516 was kept as one of the experimental cutblocks (Wood 1992). Originally, Block 5548 was not scheduled to be one of the experimental cutblocks because there was a lake in its southwest corner that may have resulted in a dramatically different bird community from the other cutblocks.

The locations of each treatment unit, tree island and point-count station within, or adjacent to, each experimental and control cutblock are shown for Block 5516 (Figure 3), Block 5546 (Figure 4), Block 5547 (Figure 5), Block 5510 (Figure 6), Block 5549 (Figure 7) and Block 5550 (Figure 8); **OG** areas are shown on the figures for the adjacent experimental cutblocks. UTM co-ordinates of point-count stations are given in Appendix A. Topographic maps with 10-m or 20-m contour intervals of the experimental cutblocks can be found in Murray (1992b).

All cutblocks are located between 980 and 1,330 m in elevation and on a southwest-facing sidehill (Table 1). The lower portions of Blocks 5546 and 5547 are located in the valley bottom of Soloman Creek with the rest of the cutblock areas on moderate to strong undulating slopes. The uneven topography results in a complex of soil moisture regimes including well-drained slopes, wet seepage areas and ponded areas on small plateaus. The blocks were chosen for this study because they were relatively similar to each other in slope, aspect, elevation and forest type prior to logging (Wood 1992). All cutblocks were planted with spruce and/or lodgepole pine seedlings in different percentages in different areas of individual cutblocks (based on Obligation Summary Reports and Pre-harvest Silviculture Prescriptions for each cutblock provided by Slocan Forest Products Ltd.).

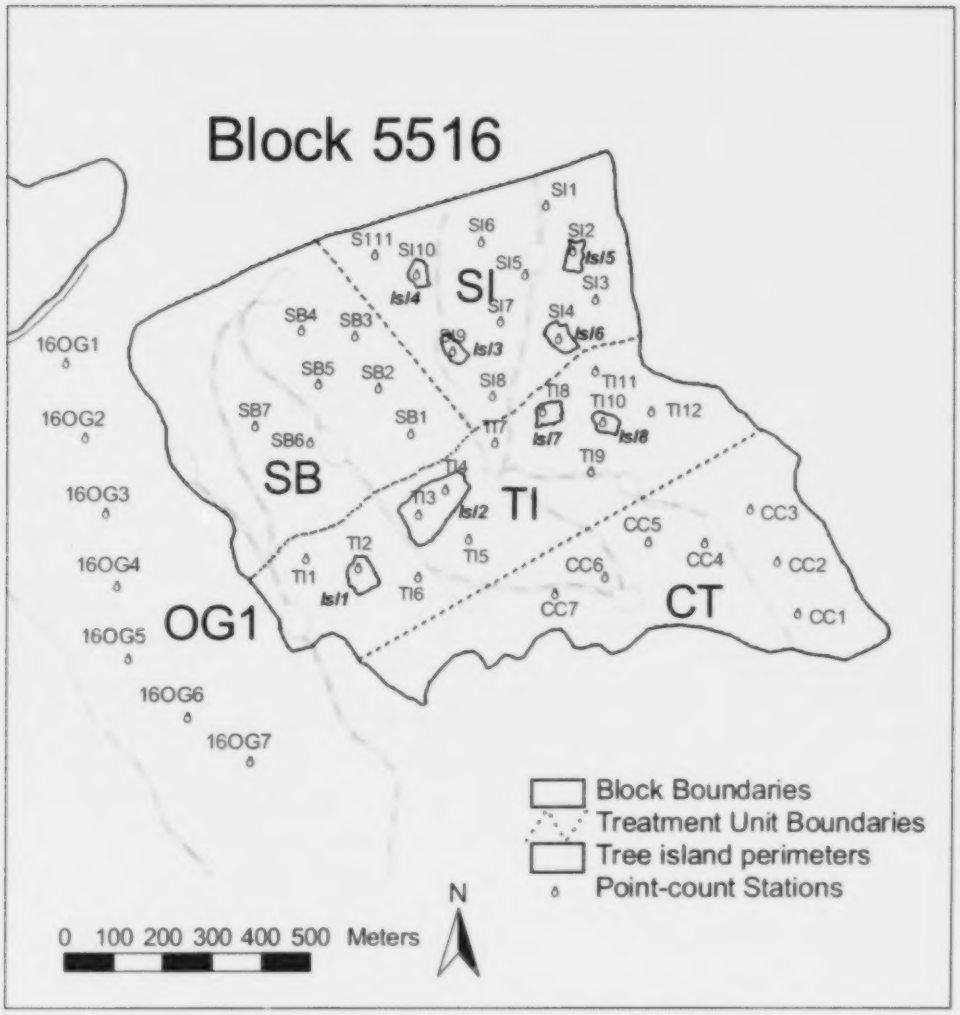

Figure 3. Experimental cutblock Block 5516 and Old-Growth Control area OG1 showing cutblock boundaries, experimental treatment unit boundaries, tree islands and point-count stations, Donna Creek Forestry/Biodiversity Project, 1996. For map legibility, the first 2 numbers have been omitted from each point-count station (e.g., Station SB6 in figure is 16SB6 in database) and tree-island (e.g. Isl 6 in figure is Isl 16-6 in database) label.

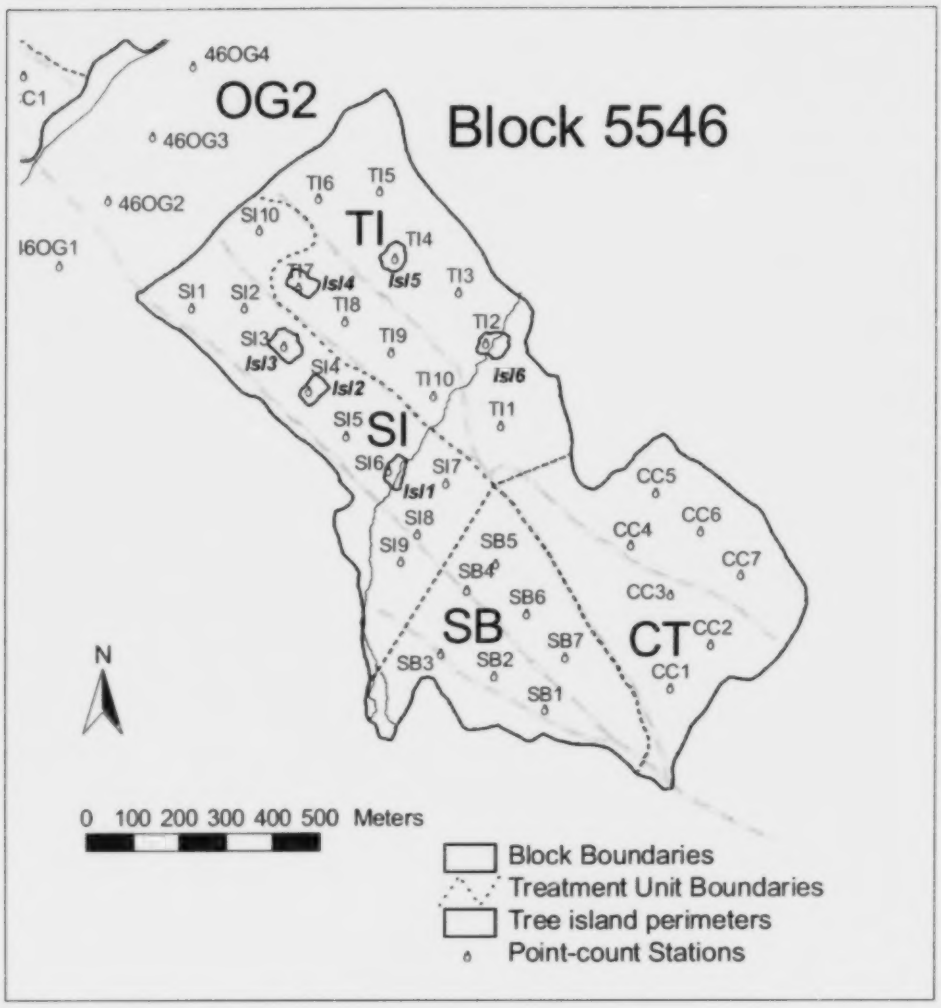

Figure 4. Experimental cutblock Block 5546 and part of Old-Growth Control area OG2 showing cutblock boundaries, experimental treatment unit boundaries, tree islands and point-count stations, Donna Creek Forestry/Biodiversity Project, 1996. For map legibility, the first 2 numbers have been omitted from each point-count station (e.g., Station SB6 in figure is 46SB6 in database) and tree-island (e.g. Isl 6 in figure is Isl 46-6 in database) label.

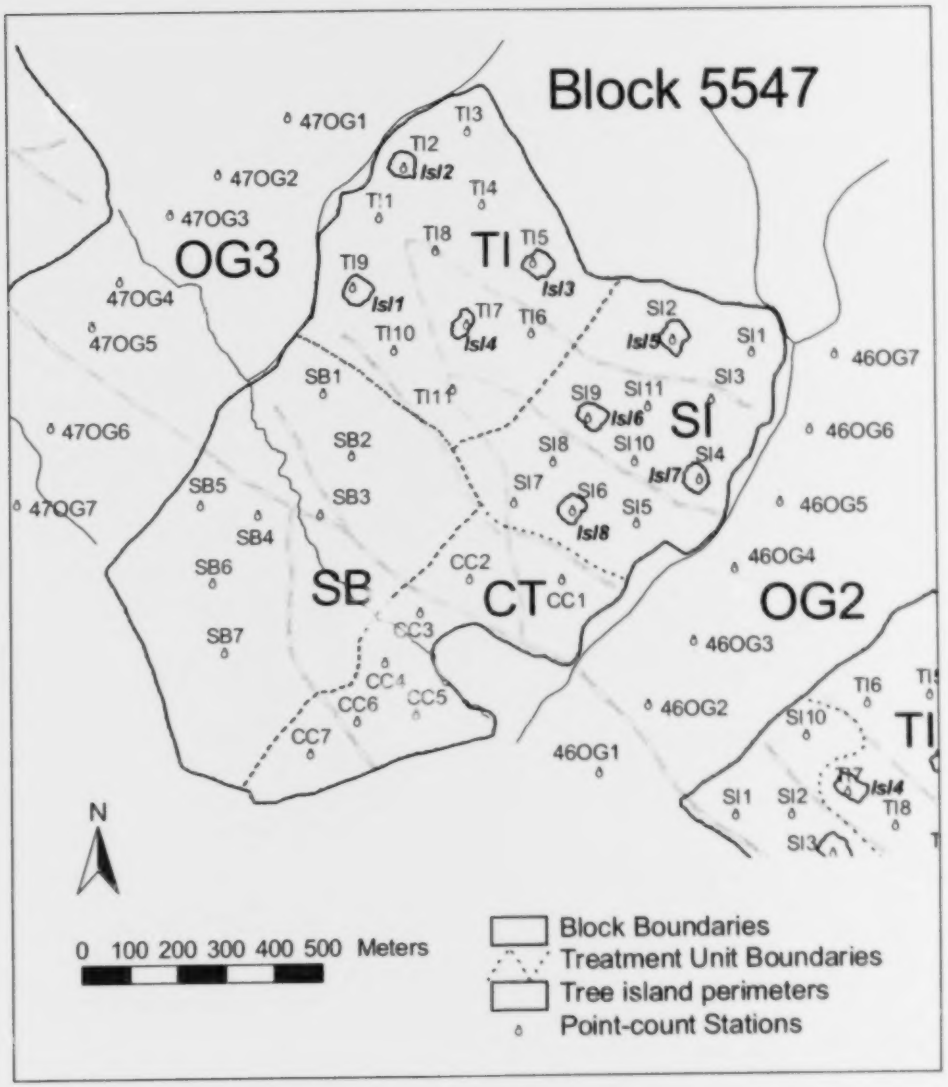

Figure 5. Experimental cutblock Block 5547 and Old-Growth Control areas OG2 and OG3 showing block boundaries, experimental treatment unit boundaries, tree islands and point-count stations, Donna Creek Forestry/Biodiversity Project, 1996. For map legibility, the first 2 numbers have been omitted from each point-count station (e.g., Station SB6 in figure is 47SB6 in database) and tree-island (e.g. Isl 6 in figure is Isl 47-6 in database) label.

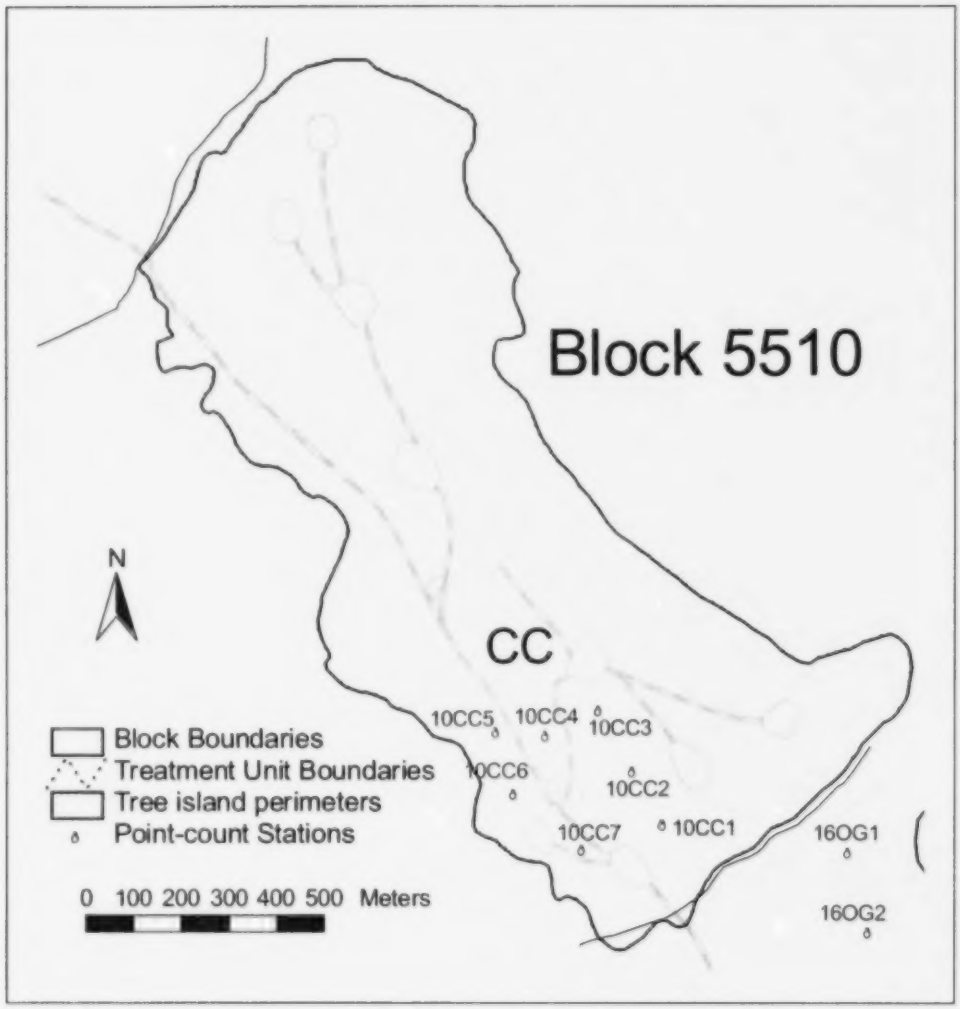

Figure 6. Clearcut Control cutblock Block 5510 showing cutblock boundaries and point-count stations, Donna Creek Forestry/Biodiversity Project, 1996.

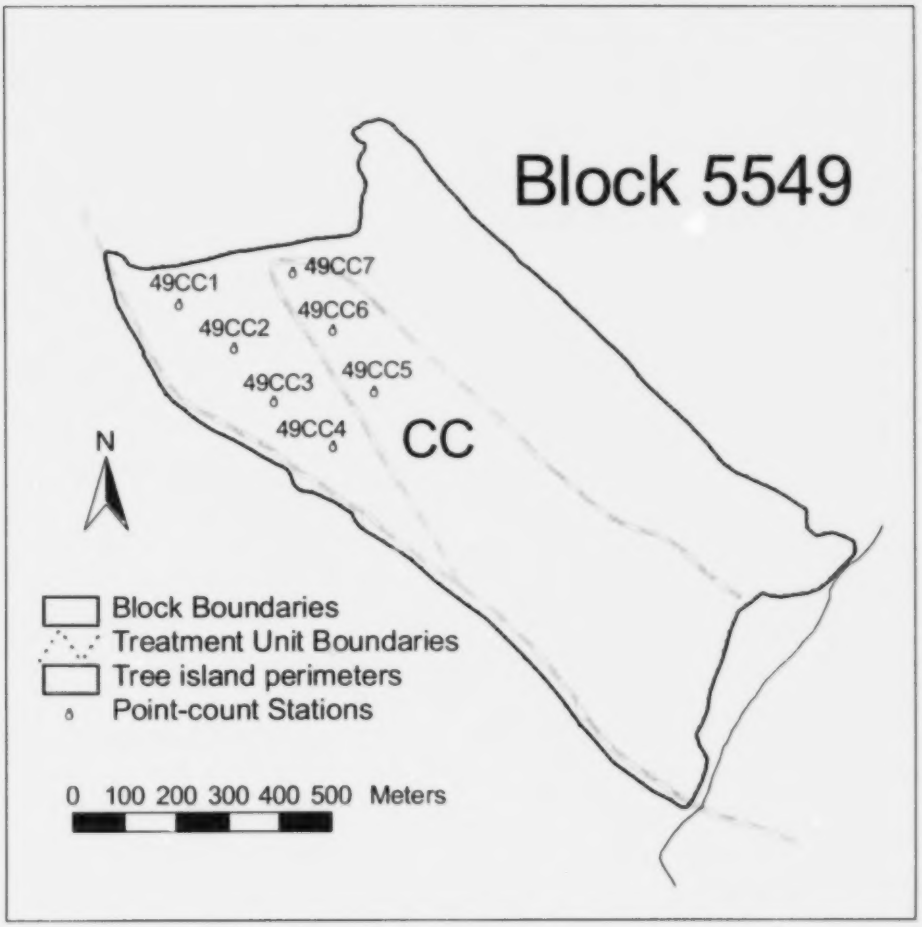

Figure 7. Clearcut Control cutblock Block 5549 showing cutblock boundaries and point-count stations, Donna Creek Forestry/Biodiversity Project, 1996.

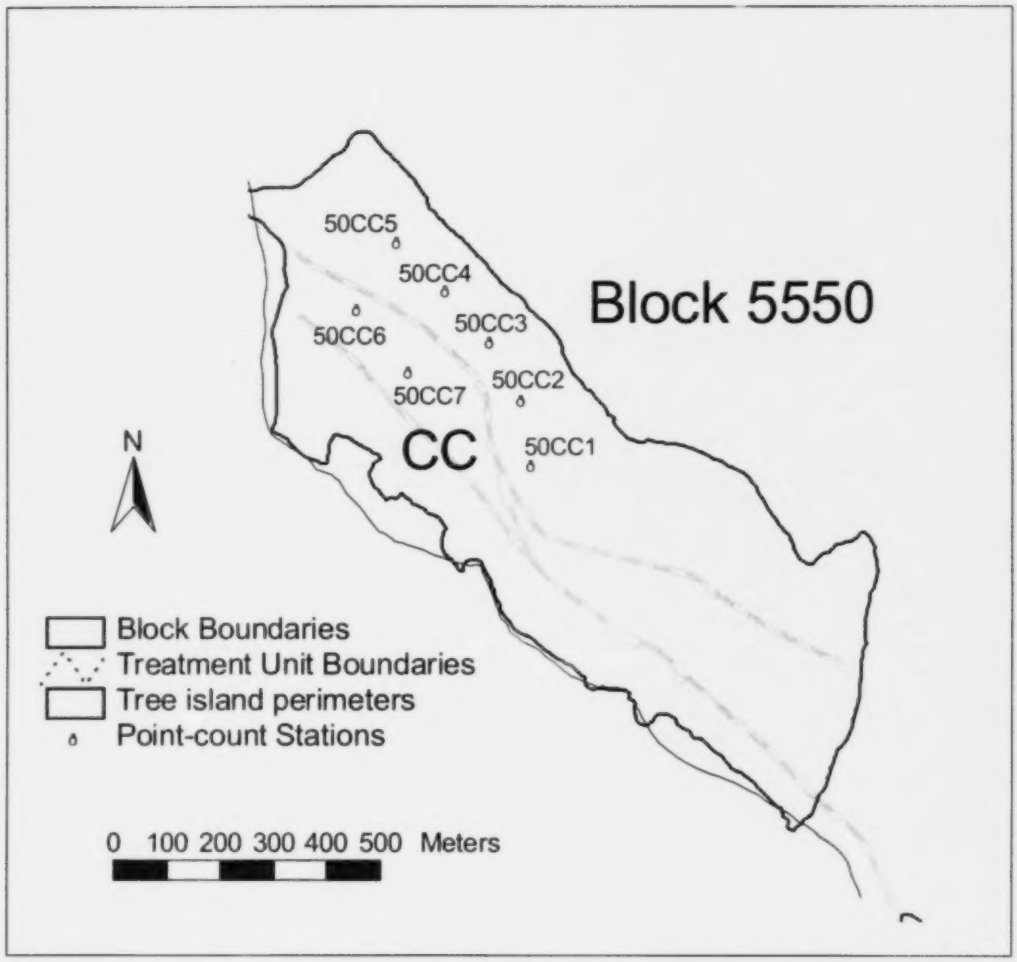

Figure 8. Clearcut Control cutblock Block 5550 showing cutblock boundaries and point-count stations, Donna Creek Forestry/Biodiversity Project, 1996.

Table 1. Physical, forest and, where relevant, timber-harvesting and silviculture characteristics for experimental and control cutblocks and Old-Growth Control areas, Donna Creek Forestry/Biodiversity Project. Data sources are identified in footnotes. NA indicates information not applicable. Blank cells indicate information was not currently available.

	Experimental cutblock			Old-Growth Control area			Clearcut Control cutblock		
	5516	5546	5547	OG1	OG2	OG3	5510	5549	5550
Physical characteristics									
Gross area (ha) [a]	119.8	90.7	112.3	NA	NA	NA	120.1	74.8	59.9
Elevation range (m) [b]	1,080-1,330	995-1,180	1,010-1,200	1,045-1,080	1,020-1,240	1,035-1,140	980-1,100	1,140-1,300	1,150-1,300
Aspect [b c]	SW	SW	SW	SW	SW	S	SW	SW	SW
Mesoslope positions [b]	Middle to upper slopes	Lower to middle slopes	Valley floor, and lower to middle slopes	Middle slopes	Lower to middle slopes	Valley floor, and lower to middle slopes	Lower slopes	Middle slopes	Middle slopes
Ecosystem Assoc. [b c]	01>04>03	04>05>07	01, 04>02>03				05>01>06, 03, 04	04>01>07	01>04>02
Forest (pre-harvest) characteristics									
Major timber types [b]	BSw833, PlSw732, Pl833, SwB834	BPl733, SwBPl834, PlSwB733	SwB844, SwB(Pl)732, BSwPl844	Sw834, BSw833, SwB834	SwPl834, PlSw834	SwPl834, Pl533			
Harvest & silviculture characteristics									
Harvest Dates [d]	Aug-Oct 1992	Sep-91	Oct-Nov 1991	None	None	None	Dec 1987-Mar 1988	Sep-91	Sep-Dec 1992
Harvest Method [d]	Clearcut by feller-buncher, ground-based skidding	Clearcut by feller-buncher, ground-based skidding	Clearcut by feller-buncher, ground-based skidding	NA	NA	NA	Clearcut by feller-buncher, ground-based skidding	Clearcut by feller-buncher, ground-based skidding	Clearcut by feller-buncher, ground-based skidding
Site Preparation & Date [d]	None	Disc Aug 1992	Disc Aug 1992 (Mounding on 2.6 ha)	NA	NA	NA	Broadcast Burned Sep 1988	None	None
Planting Dates [d]	1993 to 1995 with fill planting 1997	1993 with fill planting 1999	1993 with fill planting 1999	NA	NA	NA	1989 with fill planting 1993 and 1995	1994 with fill planting 1996	1994 with fill planting 1996

[a] Gross area based on digital GPS-traverse data provided by Slocan Forest Products Ltd.
[b] Information taken from maps in Murray (1992b).
[c] Information based on Pre-harvest Silviculture Prescription Agreements (1994 or 1995 amendments) provided by Slocan Forest Products Ltd.
[d] Information based on Obligation Summary Reports for each block provided by Slocan Forest Products Ltd.

Detailed descriptions are provided for the physical and forest characteristics of the experimental and control cutblocks and old-growth control areas (Table 1); timber harvesting information of experimental and control cutblocks (Table 1); area estimates of experimental cutblocks and treatment units (Table 2); area and perimeter estimates of tree islands (Table 3); physical characteristics of treatment units within each experimental cutblock (Table 4); and pre-harvest stem densities of the experimental cutblocks (Table 5). Some information is repeated from previous descriptions such as Dawson et al. (1992) and Gyug and Summers (1995), but updates have also been made. Based on the above tables, a brief description of each experimental and control cutblock and old-growth control area is provided below.

4.1.1 Experimental Block 5516

Block 5516 is crossed by many very small runoff creek draws and is the wettest and highest in elevation of the 3 experimental cutblocks. It is also the largest and overall steepest cutblock, with southwest facing slopes reaching a 56% gradient. There is a ridge crest at the top (northeast) edge of the cutblock. The cutblock contained a higher percentage of balsam stems (61% of live stems, 71% of dead standing stems [snags]) prior to logging than the other 2 experimental cutblocks. Spruce comprised 23% and lodgepole pine 16% of the live stems prior to logging. There were 104 standing dead stems per ha on average in the block (15.5% of total standing stems) prior to logging.

The block was logged between August and October 1992. Seven treatment tree islands ranging between 0.22 and 0.41 ha in size (mean = 0.27 ha) were created in this cutblock by reserving patches of trees from clearcutting (Figure 3). One additional tree island (Isl 16-2, 1.44 ha in size) was reserved from clearcutting because of slope instability concerns. This largest tree island was also the only tree island that was not "ringed" with perimeter stubs during timber harvesting.

4.1.2 Experimental Block 5546

Within the **TI**, **CT** and **SB** treatment units of Block 5546, slopes are relatively even and southwest facing, but slopes in the **TI** and **CT** units in the northeast half of the cutblock are generally steeper than both the **SI** and **SB** units in the southwest half of the block. This cutblock had a relatively even mix of balsam (34%), spruce (32%) and lodgepole pine (34%) prior to logging. There were 107 standing dead stems per ha on average (15.3% of total standing stems) prior to logging. Block 5546 was logged in September 1991 with 6 tree islands ranging between 0.23 and 0.33 ha in size (mean = 0.26 ha; Figure 4).

Table 2. Gross harvested areas (ha) for the 3 experimental cutblocks and their 4 treatment units, Donna Creek Forestry/Biodiversity Project. Data based on GPS traverses conducted by Slocan Forest Products Ltd. (cutblock boundary) and Peace/Williston Fish and Wildlife Compensation Program (tree island boundaries), and on GPS features mapped by PWFWCP for delineation of treatment boundaries.

Treatment unit	Experimental cutblock		
	Block 5516	Block 5546	Block 5547
Clearcut (**CT**)	29.38	23.41	18.15
Stub (**SB**)	32.14	17.64	39.27
Tree-Island (**TI**)	32.75	26.47	28.90
Stub-and-Island (**SI**)	25.53	23.15	25.99
Total	119.79	90.66	112.31

Table 3. Individual and total areas (ha) and perimeter lengths (m) for tree islands retained within the 3 experimental cutblocks, Donna Creek Forestry/Biodiversity Project, 1991-1992. Data based on GPS traverses conducted by PWFWCP in 1996.

	Block 5516			Block 5546			Block 5547		
Treatment unit	Tree island no.	Area	Perimeter	Tree island no.	Area	Perimeter	Tree island no.	Area	Perimeter
Tree-island (**TI**) unit									
Individual islands [a]	Isl 16-1	0.41	250	Isl 46-4	0.26	203	Isl 47-1	0.28	194
	Isl 16-2	1.44	497	Isl 46-5	0.24	185	Isl 47-2	0.23	186
	Isl 16-7	0.26	218	Isl 46-6	0.29	208	Isl 47-3	0.26	198
	Isl 16-8	0.22	187				Isl 47-4	0.18	169
Total island area		2.33			0.79			0.94	
% of gross unit area		7.1			3.0			3.3	
Stub-and-island (**SI**) unit									
Individual Islands [a]	Isl 16-3	0.23	198	Isl 46-1	0.23	192	Isl 47-5	0.28	213
	Isl 16-4	0.21	184	Isl 46-2	0.23	189	Isl 47-6	0.26	192
	Isl 16-5	0.25	219	Isl 46-3	0.33	222	Isl 47-7	0.24	186
	Isl 16-6	0.31	231				Isl 47-8	0.24	188
Total island area		1.00			0.79			1.02	
% of gross unit area		3.9			3.4			3.9	

[a] Numbering of Block 5547 tree islands changed from the original numbering as presented by Murray (1992a). All digital files and all post-1992 reports use the new numbering system: current Isl 47-1 was #6, Isl 47-2 was #7, Isl 47-3 was #8, Isl 47-4 was #5, Isl 47-5 was #1, Isl 47-6 was #3, Isl 47-7 was #2, and Isl 47-8 was #4.

Table 4. Elevation (m), slope (%), aspect (degrees) and moisture regimes at 11.3-m and 50-m radius plots in treatment units of experimental and control cutblocks, and in Old-Growth Control areas, Donna Creek Forestry/Biodiversity Project. Data based on measurements from plots at point-count stations, summer 1996. Where significant slope breaks occurred within a unit, separate physical attribute data are presented for each region within the unit.

	Elevation		Slope			Aspect	Moisture regime [a]					
							11.3-m radius plot			50-m radius plot		
	N	Range	Mean	SE	Range	Range	Mean	SE	Range[b]	Mean	SE	Range[b]
Experimental cutblocks												
Block 5516												
CT unit	7	1,235-1,315	20.3	1.9	13-27	196-246	0.29	0.33	-1 to 2	-0.14	0.40	-1 to 3
SB unit	7	1,165-1,245	23.1	2.0	13-28	212-288	0.19	0.19	-1 to 1	-0.14	0.26	-1 to 1
TI unit	10	1,150-1,340	28.3	3.4	14-56	188-248	0.53	0.17	-1 to 2	0.70	0.20	-1 to 3
SI unit												
Ridge crest	1	1,335	6			260	-1.00			-1.00		
SW slope	10	1,215-1,345	25.4	1.0	21-32	236-270	-0.46	0.14	-1 to 0	-0.37	0.15	-2 to 1
Block 5546												
CT unit	7	1,060-1,140	26.9	2.9	19-41	207-225	0.15	0.27	-1 to 1	0.29	0.29	-1 to 1
SB unit	7	995-1,050	16.4	1.0	13-20	200-225	0.19	0.24	-1 to 1	0.14	0.34	-1 to 1
TI unit	10	1,055-1,100	20.9	2.9	10-35	200-228	-0.29	0.20	-1 to 1	-0.30	0.21	-1 to 1
SI unit	10	1,020-1,070	15.8	2.6	4-30	186-230	0.04	0.24	-2 to 1	-0.06	0.32	-2 to 1
Block 5546												
CT unit												
Valley floor	4	1,015	2.0	0.4	1-3	194-201	0.75	0.25	0 to 1	0.75	0.25	0 to 1
SW slope	3	1,020-1,065	14.3	2.2	10-17	190-211	0.57	0.22	+1	1.00	0.00	-1 to 1
SB unit												
Valley floor	6	1,020-1,050	4.3	0.8	2-7	180-203	0.60	0.37	-1 to 2	0.67	0.42	-1 to 2
SW slope	1	1,055	13			216	-1.00			-1.00		
TI unit	11	1,075-1,165	22	1.4	17-28	201-224	0.07	0.15	-1 to 1	-0.02	0.21	-1 to 1
SI unit	11	1,065-1,195	19.3	1.7	8-30	204-230	-0.03	0.17	-1 to 3	0.14	0.23	-1 to 1
Old-Growth Control areas												
OG1	7	1,035-1,070	21.6	5.7	4-45	208-248	-0.07	0.07	-1 to 0	-0.14	0.14	-1 to 0
OG2	7	1,010-1,215	28.0	5.6	10-55	216-260	0.44	0.23	0 to 1	0.29	0.18	0 to 2
OG3	7	1,035-1,135	14.6	3.1	5-26	55-205	0.19	0.23	-1 to 1	0.14	0.26	-1 to 1
Clearcut Control cutblocks												
Block 5510	7	990-1,025	14.0	1.5	7-18	187-224	-0.62	0.27	-2 to 1	-0.57	0.37	-2 to 1
Block 5549	7	1,150-1,215	24.6	2.4	15-32	201-230	-0.15	0.26	-2 to 1	-0.19	0.34	-2 to 1
Block 5550	7	1,190-1,260	33.7	3.1	22-46	204-238	0.59	0.16	0 to 1	0.86	0.14	-1 to 1

[a] Moisture regime classes: xeric = 3, subxeric = 2, submesic = 1, mesic = 0, sub-hygric = -1, hygric = -2, suhbydric = -3, hydric = -4.

[b] Ranges for moisture regimes indicate the ranges of moisture classes found in plots, not the ranges of plot means.

Table 5. Stem densities (stems/ha) for live trees and standing dead stems (snags) >17.4-cm DBH in the experimental cutblocks prior to logging, 1987/88, Donna Creek Forestry/Biodiversity Project. Data from pre-harvest timber cruises as summarized in Stand and Stock Tables reproduced in Murray (1992a).

	Block 5516			Block 5546			Block 5547		
Tree species	Tree	Snag	Total	Tree	Snag	Total	Tree	Snag	Total
Balsam	347.2	73.3	420.5	201.2	58.9	260.1	155.1	42	197.1
Pine	90.3	15.7	106	202.1	19.6	221.7	109.4	18.5	127.9
Spruce	130.7	14.9	145.6	190.4	28.5	218.9	187.4	21.3	208.7
All Species	568.2	103.9	672.1	593.7	107	700.7	451.9	81.8	533.7

4.1.3 Experimental Block 5547

There are three regions with different slopes within Block 5547. The **TI** and **SI** units in the northeast half of the cutblock are relatively even southwest-facing slopes of 17-30%, except for a bench (8% slope and <100 m wide) that runs across the **SI** unit in the vicinity of Station 47SI11. The lower two units (**SB** and **CT**) in the lower (southwestern) half of the cutblock are split into two different slope regions. There is a relatively flat region (<8% slope) situated mainly southwest of the stream that crosses the cutblock perpendicular to the main southwest slope trend. Northeast of this stream, the slope becomes steeper and reaches 17% at the base of the main southwest slope. The **SB** and **CT** treatment units are the only units in the study area that are bisected by any major slope breaks. This block had a relatively even mix of balsam (34%), spruce (41%) and lodgepole pine (24%) prior to logging, but the mix was not evenly distributed; based on stub and tree-island tree species composition (see later sections in report), the lower portion of the block (**SB** unit) had higher proportions of lodgepole pine than the upper portions of the block (**TI** and **SI** units). There was an average of 82 standing dead stems (15.3% of total standing stems) prior to logging in the block.

Block 5547 was logged in October and November 1991. Eight tree islands ranging between 0.18 and 0.28 ha in size (mean = 0.25 ha) were created in this cutblock (Figure 5).

4.1.4 Control Clearcut Block 5510

Block 5510 is at the lowest elevation of all the cutblocks, and is located on the lower, relatively gentle (7-18%) southwest-facing slopes just northwest of Block 5516 and **OG1**. The vegetation community in Block 5510 was described as being quite different from the other **CC** cutblocks with dense alder thickets, high brush and marsh-like conditions (Joy and van den Driessche 1995). The block was clearcut logged from December 1987 to March 1988. The sampling point-count stations were established in the southwest corner of the cutblock adjacent to the Donna Creek Mainline Road (Figure 6).

4.1.5 Control Clearcut Block 5549

Block 5549 is situated on moderate southwest-facing slopes uphill of the Donna Creek Mainline Road. There are 3 small streams or drainages crossing the northwestern half of the block. The block was clearcut logged in September 1991. Point-count stations were established in the northwest corner of the cutblock (Figure 7).

4.1.6 Control Clearcut Block 5550

Block 5550 is located at the end of the Donna Creek Mainline Road and is situated on moderate to steep (22-46%) southwest-facing slopes. Block 5550 is the smallest block in the study area, at only 59.9 ha gross area. The block was logged from September to December 1992. Point-count stations were established in the northwest half of the cutblock (Figure 8).

4.1.7 Old-Growth Control Area 1

The **OG1** area is southwest and adjacent to Block 5516, but lower in elevation (Figure 2). The slopes in the area are highly variable, containing slopes as gentle as 4% and as steep as 45%. The area is generally mesic or wetter. Balsam is the predominant canopy and sub-canopy tree species with an average canopy closure of 17% (Table 6).

4.1.8 Old-Growth Control Area 2

The **OG2** area is in the forested leave-strip between Blocks 5546 and 5547 (Figure 2). The slopes in the area are highly variable, containing slopes as gentle as 10% and as steep as 55%. The site is generally mesic or drier (Table 4). The **OG2** area has a fairly even mix of pine, spruce and balsam canopy trees, although pine is slightly more common than the other two species, with an average canopy closure of 19% (Table 6).

Table 6. Canopy and sub-dominant (>10-m tall but shorter than canopy) tree coverage (%) and snag density (stems ≥15-cm DBH/ha) for tree islands and **OG** areas contrasted using one-way ANOVA, Donna Creek Forestry/Biodiversity Project, 1996. Data based on measurements from 11.3-m radius plots at point-count stations. Mean Square Error (MSE) is presented for one-way ANOVA. Scheffe's test used to distinguish significantly different means when F-statistic was significant; means followed by the same letters are not significantly different.

	Tree islands in TI unit (TIi)						Tree islands in SI unit (SIi)						Old-Growth Control areas								
	Block 5516		Block 5546		Block 5547		Block5516		Block 5546		Block 5547		OG1		OG2		OG3				
N	5		3		4		4		3		4		7		6		7		ANOVA statistics		
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	MSE	F(8,34)	P
Canopy tree coverage																					
Balsam	12.2B	3.2	3.5A	1.8	3.5A	1.9	1.8A	1.8	2.7A	1.5	3.5A	1.7	10.4B	2.5	4.3A	1.9	4.4A	2.2	26.52	2.52	0.029
Pine	2.8	1.2	0.8	0.8	0.4	0.4	1.5	1.0	4.8	2.0	0.8	0.8	2.4	2.3	8.9	2.7	8.6	3.5	30.52	1.92	0.09
Spruce	3.6	2.2	4.8	2.7	3.9	1.7	6.5	2.4	2.3	0.3	3.5	1.0	4.3	1.0	5.5	1.9	9.5	4.1	33.42	0.74	0.65
All species	18.6BC	2.3	9.2AB	3.7	7.8A	2.1	9.8AB	4.5	9.8AB	0.6	7.8A	1.6	17.1BC	3.8	18.7BC	1.9	22.5C	5.2	68.15	2.35	0.039
Sub-dominant tree coverage																					
Balsam	9.2A	1.2	11.3AB	1.3	5.4A	2.4	7.8A	2.5	8.2A	2.6	7.1A	4.3	16.5B	2.8	5.4A	1.8	5.9A	1.6	28.21	2.77	0.018
Pine	0	0	0	0	0	0	0.5	0.5	2.3	2.3	0.3	0.3	0	0	1.3	0.7	1.5	0.6	2.141	1.43	0.22
Spruce	1.2	0.4	1.7	1.7	0	0	1.8	0.6	1.8	1.2	1.4	0.2	4.1	3.0	1.3	0.8	0.7	0.5	11.53	0.65	0.73
Deciduous	0	0	0	0	0	0	0	0	0	0	0	0	0.9	0.9	0	0	0	0	0.908	0.59	0.78
All species	10.4A	1.0	13.0A	1.5	5.4A	2.4	10.0A	3.2	12.3A	2.3	8.8A	4.3	21.4B	4.7	7.9A	1.6	8.0A	1.5	42.74	3.07	0.01
Snag density [a]	155C	35	100BC	0	44A	21	119BC	24	67AB	22	44A	19	89AB	15	71AB	12	96B	18	2304	2.76	0.018

[a] Note that snag densities will not exact match with Gyug (1997) if mean densities are calculated. Gyug (1997) had assumed that snags were counted in 11-m radius plots, when 11.3-m radius plots were actually used. This does not change any of the correlations in Gyug (1997) but the mean snag densities in Table 11 of Gyug (1997) should be multiplied by a factor of 0.96.

4.1.9 Old-Growth Control Area 3

The **OG3** area is northwest of Block 5547 in the forested leave-strip between Block 5547 and Block 5548, which is not one of the experimental or control cutblocks (Figure 2). The area is situated on fairly moderate slopes that have a variety of aspects because two major streams and gullies cross through the center of the area (Figure 5). When the point-count stations were established, many of the stations ended up being actually closer to Block 5548 than to Block 5547 (Figures 5 and 6). The area has a fairly even mix of spruce, pine and balsam canopy trees with an average canopy closure of 23% (Table 6).

4.2 Vegetation and CWD after logging

Comparisons of tree coverage and snag densities for canopy and sub-dominant (trees >10-m height but shorter than the canopy) trees were only made for the **OG** areas and the **SIi** and **TIi** units because there were no trees or snags recorded in point-count station plots in the **CC**, **CT** or **SB** units or in the **TIh** and **SIh** units (Table 6). There was significantly higher balsam canopy coverage (10-12%) in the **TIi** of Block 5516 and **OG3** (adjacent to Block 5516) than any other units (1.8-4.4%) (Table 6). Block 5516 also tended to have higher balsam canopy levels (stem density and species composition) in the pre-harvested forest than the other experimental cutblocks (Table 5). No significant differences could be shown in pine or spruce canopy tree coverage between units (Table 6). For overall canopy tree coverage, there were significant differences between means, with the highest canopy coverage in the **OG** areas and the **TIi** unit of Block 5516 (17.1-22.5%) and lower levels in all other tree-island units (7.8-9.8%) (Table 6). This was probably due to stem fallover (presumably from blowdown) in the tree islands, thus resulting in tree islands having a lower canopy tree coverage than the **OG** areas. However, those results should be interpreted with caution because the point-count stations were not randomly, or even systematically, placed, so statistical comparisons of this sort may not be fully valid. The vegetation data was collected primarily for correlation of wildlife data, not for rigorous comparisons of the vegetation within one area to another. Falldown estimates were not available for all tree islands or any OG areas in 1996, so while tentative conclusions might be that some of the differences in tree canopy coverage might be due to falldown, this is not conclusive.

Balsam was the primary sub-dominant tree present in every unit accounting for at least 67% of the total sub-dominant tree coverage (Table 6). Sub-dominant balsam trees occurred in all but 2 of the 43 plots in the tree islands and **OG** areas. There were significant differences in the balsam coverage and in the total sub-dominant tree coverage between units (Table 6).

Balsam had significantly higher coverage in **OG1** (16.5%) than all other units (5.4-9.2%) except for **TIi** units in Block 5546 (11.3%). Overall sub-dominant tree coverage was also significantly higher in **OG1** (21.4%) than in all other units (5.4-13.0%). Pine (0-2.3%) and spruce (0-4.1%) sub-dominant coverage were much lower than for balsam (Table 6). Sub-dominant pine trees were only found in 9 of the 43 plots in the tree-island and **OG** units, and sub-dominant spruce trees were found in 22 of the 43 plots.

There were significant differences in snag densities within the forested areas (residual tree island and **OG** units; Table 6). The highest snag densites were in the **TIi** and **SIi** units of Block 5516 (119-155 snags/ha). The lowest snag densities were in Block 5547 **TIi** and **SIi** units (44 snags/ha), with all other units intermediate between these two extremes.

The forested areas (residual tree-island and **OG** units) had significantly higher cover percentages of deciduous and coniferous tall shrubs (2-9.9 m in height) than the harvested areas (Table 7). Coverage of tall deciduous or coniferous shrubs was below 1% in harvested areas, but averaged 3.7-5.6% for deciduous shrubs and 10.3-18.3% for coniferous shrubs in forested areas (Table 7). The greater coverage by tall shrubs was expected given the nature of ground-based logging where the tall-shrub strata would tend to be heavily impacted by machinery during logging compared to no effects in areas that were not harvested. Within forested areas, the **OG** areas had significantly higher cover of coniferous tall shrubs than did the residual tree-island units, but the difference in coverage was <10% (Table 7). The only coniferous tall shrubs encountered in the plots were young balsam and spruce trees, and almost all (96%) of the deciduous tall shrubs encountered in the plots were alder (*Alnus viridis*), with single occurrences of black twinberry (*Lonicera involucrata*) and cottonwood.

There were no significant differences in low-shrub cover between the experimental or control units although there was a tendency for higher percentages of low-shrub coniferous cover in the residual tree-island and **OG** units (Table 7). Cover percentages of these coniferous and deciduous low shrubs were highly variable from point to point within any unit so that significant differences could not be shown between any treatments. Coniferous low shrubs consisted of young lodgepole pine, balsam and spruce. Deciduous low shrubs consisted of mainly black huckleberry (*Vaccinium membranaceum*), gooseberries and currants (*Ribes* spp.), alder (*Alnus viridis*), raspberries (*Rubus* spp.), white-flowered rhododendron (*Rhododendron albiflorum*), mountain ash (*Sorbus scopulina*), black twinberry, elderberry (*Sambucus racemosa*), willows (*Salix* spp.), immature cottonwood and aspen (*Populus tremuloides*) trees, and five other infrequently encountered species of low shrubs.

Table 7. Tall shrub (2.0-9.9 m), low shrub (<2.0 m) and non-woody ground coverage (%) for each treatment unit in the experimental cutblocks, and for each control cutblock and Old-Growth Control area, contrasted with one-way ANOVA, Donna Creek Forestry/Biodiversity Project, 1996. N = 3 for each all block mean, with actual value for each unit presented since standard errors are not very meaningful when N = 3. Data for each block-unit mean is based on sub-sampling at 3 to 7 11.3-m radius plots at point-count stations in each unit in the summer of 1996. Unit means are labelled as Blocks 5516, 5546 and 5547, but for CC means these are actually Blocks 5510, 5549 and 5550, in that order, and for **OG** means are OG1,OG2, and OG3, in that order.

	Mean vegetation cover (%) for treatment units and control areas								ANOVA statistics	
Vegetation strata	CC	CT	SB	Tlh	Slh	Tli	Sli	OG	F	P
Tall shrubs										
Deciduous										
Block 5516	0.8	0	0.2	0.2	0	9.3	3.0	4.6		
Block 5546	0.3	0	0	1.1	0	6.8	7.3	3.3		
Block 5547	0	0.1	0.5	0	0	0.6	3.2	3.2		
All block mean [a]	0.4A	0.0A	0.2A	0.4A	0A	5.6B	4.5B	3.7B	4.82	0.004
Coniferous										
Block 5516	0.7	0.1	0	0	0	8.8	8.5	18.9		
Block 5546	0.1	0	0	0.9	0.2	13.3	16.7	20.8		
Block 5547	0	0	0.3	0.2	0.1	8.8	8.4	15.1		
All block mean [a]	0.3A	0.0A	0.1A	0.3A	0.1A	10.3B	11.2B	18.3C	32.09	<.001
Total tall-shrub mean [a]	0.6A	0.0A	0.3A	0.8A	0.1A	15.9B	15.7B	22.0C	21.21	<.001
Low shrubs										
Deciduous										
Block 5516	5.0	3.5	6.0	9.7	5.3	14.3	30.2	4.5		
Block 5546	4.0	10.8	6.5	5.8	3.3	2.7	2.3	5.5		
Block 5547	1.5	2.5	5.1	10.8	9.4	6.5	17.3	5.1		
All block mean [a]	3.5	5.6	5.9	8.8	6.0	7.9	16.6	5.0	1.46	0.25
Coniferous										
Block 5516	1.5	0.6	0.5	1.3	0.4	1.8	3.3	4.6		
Block 5546	1.4	2.4	2.7	1.0	0.3	1.3	6.5	3.5		
Block 5547	0.2	1.8	1.4	2.0	2.0	5.8	3.3	1.9		
All block mean [a]	1.1	1.6	1.6	1.4	0.9	3.0	4.3	3.3	2.51	0.06
Total low-shrub mean [a]	4.5	7.2	7.4	10.2	6.9	10.8	20.9	8.3	2.38	0.07

(Table 7 continued on next page)

(Table 7 continued)

Vegetation strata	Mean vegetation cover (%) for treatment units and control areas								ANOVA statistics	
	CC	CT	SB	Tlh	Slh	Tli	Sli	OG	F	P
Non-woody ground cover										
Grass										
Block 5516	4.4	12.2	0.3	0.7	2.7	0.2	1.2	0.1		
Block 5546	5.1	0.1	1.5	2.1	5.4	1.0	0	0		
Block 5547	6.6	6.7	6.4	9.1	3.4	1.9	0.1	0.1		
All block mean [a]	5.4	6.4	2.7	4.0	3.9	1.1	0.4	0.1	1.79	0.16
Fireweed										
Block 5516	24.3	28.1	31.1	24.7	35.5	0	0	0		
Block 5546	7.3	35.0	3.8	18.6	20.1	0	0	0		
Block 5547	6.9	5.7	15.1	10.7	18.7	0.1	0.1	0		
All block mean [a]	12.8AB	22.9A	16.7A	18.0A	24.8A	0.0B	0.0B	0.0B	4.03	0.01
Other herb										
Block 5516	14.1	10.6	5.8	3.8	8.7	2.9	25.9	9.2		
Block 5546	9.0	18.3	15.2	9.5	10.3	7.8	2.5	8.2		
Block 5547	8.8	3.5	6.4	12.4	25.8	9.5	13.6	3.7		
All block mean [a]	10.6	10.8	9.1	8.6	14.9	6.8	14.0	7.0	0.61	0.74
Moss										
Block 5516	14.6	1.5	0.3	0.5	3.8	64.0	41.3	62.2		
Block 5546	2.2	1.2	5.4	1.3	9.5	58.3	65.0	80.0		
Block 5547	0.1	0.3	2.0	2.8	12.9	19.0	66.3	77.5		
All block mean [a]	5.6A	1.0A	2.6A	1.5A	8.7A	47.1B	57.5BC	73.2C	21.4	<.001

[a] Means followed by same letters are not significantly different using Scheffe's test when the one-factor ANOVA statistics indicated a significant difference (P<0.05 in bold).

Non-woody ground cover was separated into 4 classes for analyses: grasses, fireweed (*Epilobium angustifolium*), other herbs, and mosses. Forty-nine species of herbs were identified in the "other" herb category, and three additional plant species were not identified taxonomically below the genus level. The most commonly encountered herbs were bunchberry (*Cornus canadensis*), five-leaved bramble (*Rubus pedatus*), palmate coltsfoot (*Petasites palmatus*) and heart-leaved arnica (*Arnica cordifolia*). Grasses and mosses were not identified to any lower taxa groupings.

There were no significant differences in grass cover in the experimental or control units, although grass cover did tend to be higher in the harvested units (Table 7). Grass cover may increase over time, at least until shrub cover becomes more prevalent, as grasses establish

themselves in the recently clearcut cutblocks. Fireweed cover was significantly higher in the harvested units, and was almost entirely absent from the residual tree islands and absent from the **OG** areas (Table 7). No significant differences could be shown in the "Other Herb" grouping (Table 7), but differences may occur if this group was examined at the species level since some species will tend to flourish in newly harvested areas while others prefer a shaded canopy. Moss ground cover was significantly higher in the residual tree islands and in the **OG** areas than in the harvested areas (Table 7). Mosses were the dominant ground cover in most of the residual tree-island and **OG** plots.

There were significantly higher densities of CWD pieces in the harvested plots than in the residual tree-island or **OG** plots (Table 8). However, the mean CWD piece length was significantly longer in the residual tree islands and **OG** areas, so volume may not be much different if it could have been calculated from this data. Long CWD pieces -often whole downed trees of >20 m length- were often found in the unharvested tree islands and in the **OG** areas. These long pieces, however, would have likely been broken up by the heavy machinery during logging and site preparation in the harvested areas, where virtually no pieces of >20 m in length were found. The result of more, but shorter, CWD pieces would therefore be expected in harvested areas.

The mean CWD Decay Class was significantly higher in the residual tree islands and **OG** areas indicating that much of the CWD in the unharvested areas had been on the ground and/or dead for some time. In the harvested areas, very decayed CWD would be crushed or broken-up by machinery, and therefore often not counted on CWD transects since they would no longer be whole pieces larger than 7.5-cm diameter. The CWD in harvested areas would also probably consist of many pieces of sound wood that had been knocked over or bucked up (e.g., tops and limbs of harvested trees) during logging; a number of undersized or non-merchantable trees would have also been felled or knocked over but never taken to a landing.

4.3 Stub Densities, Tree-Island Areas and Species Composition

4.3.1 Stub Densities

A total of 2,133 stubs were created in the 3 experimental cutblocks. 109 of these were <15-cm DBH and were not further considered in this analysis. Of the 2,024 stubs ≥15-cm DBH, 1,069 were dispersed stubs and 955 were perimeter stubs. Densities for these 2 types of stubs were calculated differently and are presented separately below.

Table 8. Coarse woody debris (CWD; downed stems >7.4 cm in diameter) densities (pieces/ha) and mean CWD piece diameter (cm) at largest end, mean CWD piece length (m) and mean CWD piece Decay Class (from 1 to 5, see text) in each treatment unit in the experimental and control cutblocks, and in each Old-Growth Control area, contrasted with one-way ANOVA using unit means, Donna Creek Forestry/Biodiversity Project, 1996. N = 3 for each all block mean, with actual value for each unit presented since standard errors are not very meaningful when N = 3. Data for each block-unit mean is based on sub-sampling at 3 to 7 point-count stations in each unit in the summer of 1996, with 2 24-m transect lines radiating at right angles from each point-count station . Unit means are labelled as Blocks 5516, 5546 and 5547, but for CC means these are actually Blocks 5510, 5549 and 5550, in that order, and for **OG** means are OG1, OG2, and OG3, in that order.

	Treatment unit or control area								ANOVA Statistics	
	CC	CT	SB	TIh	SIh	TIi	SIi	OG	F	P
CWD density (pieces/ha)										
Block 5516	1,611	2,253	1,920	1,917	2,465	742	768	971		
Block 5546	1,895	2,238	2,219	1,638	2,172	1,670	1,242	552		
Block 5547	1,010	1,689	1,589	1,516	1,208	719	1,235	764		
All blocks mean [1]	1,505BC	2,060C	1,909C	1,690C	1,949C	1,043AB	1,081AB	762A	4.36	0.007
Mean piece diameter at largest end (cm)										
Block 5516	17.5	18.3	19.9	20.1	19.3	21.7	23.3	22.6		
Block 5546	18.4	14.1	14.2	18.8	16.9	20.5	19.0	19.3		
Block 5547	19.3	18.3	18.3	19.4	20.2	24.1	19.3	16.9		
All blocks mean [1]	18.4	16.9	17.5	19.5	18.8	22.1	20.5	19.6	1.83	0.15
Mean piece length (m)										
Block 5516	3.0	2.9	2.9	3.0	3.0	7.0	9.0	7.3		
Block 5546	2.8	2.6	2.5	3.1	2.7	5.7	6.8	7.2		
Block 5547	2.5	2.6	2.8	2.6	2.7	7.5	6.1	6.1		
All blocks mean [1]	2.7A	2.7A	2.7A	2.9A	2.8A	6.8B	7.3B	6.9B	29.4	<.001
Mean CWD Decay Class										
Block 5516	2.01	1.68	1.64	1.59	1.57	2.40	2.07	2.84		
Block 5546	2.03	1.90	1.57	1.67	1.84	2.44	2.07	2.35		
Block 5547	2.08	1.95	1.65	2.14	1.90	2.20	2.41	2.32		
All blocks mean [1]	2.04BC	1.84AB	1.62A	1.80AB	1.77AB	2.35DE	2.18CD	2.50E	8.03	<.001

[1] Means followed by same letters are not significantly different using Scheffe's test when the one-factor ANOVA statistics indicated a significant difference (P<0.05 in bold).

Varying quantities of dispersed stubs (N = 1,069) were created in each of the 3 experimental cutblocks: 499 dispersed stubs in Block 5516, 209 dispersed stubs in Block 5546 and 361 dispersed stubs in Block 5547 (Table 9). The average stub density (calculated by dividing the number of dispersed stubs by the gross unit area) for treatment units that had dispersed stubs as a prescribed treatment factor was 6.3 stubs/ha (N = 6 units, SE = 0.72), with a range from 4.7 stubs/ha to 9.5 stubs/ha for individual units (Table 9). There were also a few dispersed stubs created in the non-stubbed treatment units, including 1 stub in the **CC** unit of Block 5549. The only non-stubbed treatment unit with greater than 2 stubs present was the **TIh** unit in Block 5516. Seven of the 10 stubs present, however, were within 8 m of either the surrounding old-growth forest, the **SB** boundary or a tree island, thus resulting in only 3 stubs being present in the greater harvested area. Therefore, this **TIh** unit had an effective density of about 0.1 stubs/ha, rather than the 0.3 stubs/ha shown in Table 9.

An overall density for dispersed stubs in the treatment units, calculated from stub counts within a 50-m radius point-count plot, was 8.9 stubs/ha (N = 6 units, SE = 0.53; Table 10). In comparison, a density of 7.5 stubs/ha (N = 6 units, SE = 0.83) was determined based on GPS-traversed stub locations and the gross unit area (Table 10). Both density estimates

Table 9. Abundance and density (stubs/ha) of dispersed stubs (≥15-cm DBH) in each experimental cutblock and treatment unit, Donna Creek Forestry/Biodiversity Project, 1996. Data based on gross block areas and stub counts during 1996 stub assessments and GPS traverses. Stub counts for Block 5547 included those stubs tagged in 1992 but fallen over by 1996, thus giving a complete post-harvest stub density estimate. Clearcut Control Block 5549 was not included in table, but the single stub present in the block yielded a stub density of 0.013 stubs/ha.

	Block 5516		Block 5546		Block 5547	
Treatment unit	$N_{d\ stubs}$	Density	$N_{d\ stubs}$	Density	$N_{d\ stubs}$	Density
CT	2	0.07	1	0.04	0	0
SB	306	9.52	83	4.7	204	5.19
TIh	10 [1]	0.31 [1]	0	0	1	0.03
SIh	181	7.09	125	5.4	156 (147)[2]	6.00 (5.65)[2]
Block total	499		209		361 (352)	

[1] Effective stub density of Block 5516 **TIh** area is about 0.10 stubs/ha as 7 of the 10 stubs were situated at the periphery of the greater treatment area.

[2] A cluster of 9 stubs (Tag Numbers 436-444) were within 12 m of Isl 47-7 but have been identified as non-island or dispersed stubs, both in 1992 by Murray (1992a) and in 1996 by the GPS-traverse crew. However, it appears they were probably created as perimeter stubs as this is the only tight cluster of such stubs in the harvested portions of any of the blocks. The data in parentheses are given as the data if these stubs were considered perimeter stubs.

Table 10. Stub densities (stubs/ha) for stubs ≥15-cm DBH in treatment units with dispersed stubs (**SB** and **SIh**) in each experimental cutblock, Donna Creek Forestry/Biodiversity Project, 1996. Data based on counted stubs within 50-m radius plots at point-count stations, summer 1996, and separately on data from GPS traverses, 1996. N = 7 for all means.

	Block 5516			Block 5546			Block 5547		
	Mean	SE	Range	Mean	SE	Range	Mean	SE	Range
Dispersed stub density based on 50-m radius plots at point-count stations									
SB units	10.7	0.73	8.9 - 14.0	8.2	1.64	2.5-14.0	7.1	1.47	0.0 - 10.2
SIh units	10.0	1.53	3.8 - 14.0	8.9	1.33	6.4-15.3	8.5	1.64	2.5 - 14.0
Dispersed stub density based on GPS traverses									
SB units	10.7	0.47	8.9 - 12.7	5.8	1.24	1.3 - 11.5	5.3	1.32	0.0 - 10.2
SIh units	8.9	1.50	5.1 - 15.3	7.5	1.51	2.5 - 14.0	6.6	1.61	1.3 - 12.7

were within the prescribed level of 5-10 stubs/ha set out in the original experimental design (Dawson et al. 1992). The density estimate based on the point-count plots are, on average, slightly higher than the density estimates utilising the gross unit area. A possible explanation for this disparity is that very few point-count stations were placed immediately adjacent to roads or landings; typically, stubs were not created within 25 m of any road or landing. Consequently, using the gross area –that includes the area influenced by roads and landings- would result in an underestimated stub density compared to the point-count plot estimate. One point-count plot (47SB3) that was placed in the middle of the fork of two roads had no stubs present.

In addition to the dispersed stubs, 955 tree-island perimeter stubs were created in the 3 experimental cutblocks: 344 perimeter stubs in Block 5516, 286 perimeter stubs in Block 5546, and 325 perimeter stubs in Block 5547 (Table 11). The mean number of perimeter stubs per tree island (not including Isl 16-2) was 45.3 stubs (N = 21, SE = 2.24). Isl 16-2 was not part of the prescribed experimental design and consequently had virtually no perimeter stubs present, therefore it was excluded from any perimeter-stub analyses. Mean tree-island perimeter length was 200.6 m (N = 21, SE = 4.15; Table 3) for an average distance of 4.4 m between stubs, if they were evenly distributed around the perimeter of each tree island. The number of perimeter stubs around tree islands was not correlated with tree-island size ($r = 0.28$, $F_{(1,19)} = 1.56$, $P = 0.23$) or perimeter length ($r = 0.27$, $F_{(1,19)} = 1.50$, $P = 0.24$), probably because tree islands have a very limited size range by experimental design.

Table 11. Number of perimeter stubs (≥15-cm DBH) at each tree island, Donna Creek Forestry/ Biodiversity Project, 1996. Stub count data based on 1996 GPS traverses. Stub counts for Block 5547 included those stubs tagged in 1992 but fallen over by 1996, thus giving a more complete post-harvest stub count.

	Block 5516		Block 5546		Block 5547	
Treatment unit	Island no.	$N_{p.\ stubs}$	Island no.	$N_{p.\ stubs}$	Island no.	$N_{p.\ stubs}$
TIi	Isl 16-1	47	Isl 46-4	54	Isl 47-1	46
	Isl 16-2	3	Isl 46-5	49	Isl 47-2	40
	Isl 16-7	47	Isl 46-6	37	Isl 47-3	26
	Isl 16-8	53			Isl 47-4	40
Total		150		140		152
SIi	Isl 16-3	49	Isl 46-1	38	Isl 47-5	63
	Isl 16-4	52	Isl 46-2	50	Isl 47-6	38
	Isl 16-5	29	Isl 46-3	58	Isl 47-7	34 (43) [1]
	Isl 16-6	64			Isl 47-8	38
Total		194		146		173

[1] A cluster of 9 stubs (Tag Numbers 436-444) were within 12 m of Isl 47-7 but have been identified as non-island or dispersed stubs, both in 1992 by Murray (1992a) and in 1996 by the GPS-traverse crew. However, it appears they were probably created as perimeter stubs as this is the only tight cluster of such stubs in the harvested portions of any of the blocks. The data in parentheses are given as the data if these stubs were considered perimeter stubs.

4.3.2 Tree-Island Areas

The mean size for 21 of the 22 tree islands was 0.26 ha (SE = 0.01 ha, Table 3). This mean excluded the single 1.4-ha tree island that was created because of slope stability concerns. The mean percentage of area taken up by the tree islands was 3.50% (N = 5, SE = 0.18%) excluding the **TI** unit of Block 5516 (7.1% of area in tree islands) where the single large island was located. The mean size of tree islands retained within each treatment unit was very close to the target of 0.25 ha. The prescribed ratio of 0.25 ha of tree island for every 8 ha of harvested area (i.e., 3.1%).was only slightly exceeded with the actual area occupied by tree islands of 3.5%.

4.3.3 Stub Tree Species Composition

The species composition of the dispersed stubs in the harvested portions of the experimental cutblocks was roughly proportionate to the availability of standing stems before logging. In Block 5516, the before-logging proportions of all balsam-pine-spruce trees (live and dead)

were 63%-16%-22% (Table 5) and the proportions of dispersed stubs by species after logging were 61%-20%-19% (N= 499 dispersed stubs). In Block 5546, the before-logging proportions of balsam-pine-spruce were 37%-32%-31% (Table 5) and the proportions of stubs after logging were 36%-34%-30% (N = 209 dispersed stubs). In Block 5547, the before-logging proportions of balsam-pine-spruce were 37%-24%-39% (Table 5) and the proportions of stubs after logging were 33%-23%-43% (N = 361 dispersed stubs).

4.4 Decay-assessed Stub Sample

4.4.1 Comparison to other stubs

A total of 328 stubs (includes both dispersed stubs and perimeter stubs) were decay assessed in the 20% sample from the **SB** and **SI** treatment units. Of these, 11 were <15-cm DBH and the field data sheet was lost for another one before the data was entered, thus only 316 stubs were considered part of the decay-assessed stub sample. The species designation was unknown for 3 stubs in the 20% sample and for 3 stubs in the non-sampled stubs (N = 1,217), as well some stubs were missing decay attribute measurements. Therefore, the aggregate total for stubs that were examined for decay attributes does not necessarily equal the total assessed stubs for all analyses. In addition to the 20% sample, 12 stubs were also assessed for decay characteristics because they contained animal dens (N = 3) or cavities used or made by birds(N = 9). These stubs were analysed separately from the 20% sample.

The 20% sample of stubs for which decay characteristics were assessed was considered representative of the population of stubs in the **SB** and **SI** units of the experimental cutblocks as the species composition and mean DBH were not significantly different between the 20% stub sample and the remaining stubs. Within each experimental cutblock, the proportion of each species in the 20% sample was not significantly different from the non-sampled population of stubs (Block 5516, $X^2_{(2\ df)} = 0.377$, P = 0.83; Block 5546, $X^2_{(2\ df)} = 0.797$, P = 0.67; Block 5546, $X^2_{(2\ df)} = 0.361$, P = 0.83). Within each species in each experimental cutblock, the mean stub DBH was not significantly different in the 20% sample when compared to the non-sampled stubs (Table 12).

Table 12. Mean stub[a] diameter (cm) at breast height (1.3 m; DBH) for stubs ≥15-cm DBH, by tree species, for the non-sampled tagged stubs, and the 20% (1-in-5) stub sample assessed for decay characteristics in the **SB** and **SI** treatment units of each experimental cutblock, Donna Creek Forestry/Biodiversity Project, 1996. Mean DBH compared within species and within blocks by Student's t-test assuming unequal variances. Two cottonwood stubs in the non-tagged sample, and any stubs for which species and DBH were unknown or unrecorded have not been included in the table.

	Non-sampled tagged stubs			20% decay-assessed stub sample			Total	t-test statistics	
	N	Mean	SE	N	Mean	SE	stubs	t	P
Block 5516									
Balsam	324	32.6	0.59	91	30.96	1.02	415	1.36	0.17
Pine	92	30.5	0.78	22	30.97	1.48	114	0.29	0.77
Spruce	109	37.3	1.06	29	41.37	2.15	138	1.70	0.10
Total	525			142			667		
Block 5546									
Balsam	104	31.2	0.9	29	28.68	1.80	133	1.26	0.21
Pine	77	29.4	0.82	16	27.71	2.36	93	0.69	0.50
Spruce	95	35.3	1.18	22	37.46	2.20	117	0.86	0.40
Total	276			67			343		
Block 5547									
Balsam	154	34.7	0.92	40	34.20	1.78	194	0.25	0.81
Pine	64	35.1	0.9	18	32.42	1.55	82	1.48	0.15
Spruce	195	41.0	0.71	46	43.46	1.70	241	1.36	0.18
Total	413			104			517		
Grand total	1,214			313			1,527		

[a] Includes dispersed stubs and tree-island perimeter stubs.

4.4.2 Decay Assessments

Examination of the decay state of assessed stubs revealed that 61% of the stubs had sound sapwood, 36% had spongy sapwood and only 3% had soft sapwood (Table 13). There were no differences in this sapwood ratio between species (Table 13; $X^2_{(4\ df)} = 7.75$, P = 0.10). For heartwood decay, 38% had sound heartwood, 53% had spongy heartwood, and only 9% had soft or very soft heartwood (Table 13). There were significant differences in the heartwood ratio between species (Table 13; $X^2_{(4\ df)} = 10.49$, P = 0.03). The biggest deviations from the overall averages were in lodgepole pine stubs where 54% had sound heartwood (16% above the mean), 42% had spongy heartwood (9% below the mean) and only 4% had soft or very soft heartwood (5% below the mean).

The decay state of the sapwood and heartwood of each stub were correlated. Stubs with sound sapwood were most likely (51%) to have sound heartwood, no significant difference

Table 13. Sapwood and heartwood decay conditions of stubs ≥15-cm DBH, by species and diameter (DBH) class, in the 20% (1-in-5) decay-assessed stub sample, Donna Creek Forestry/ Biodiversity Project, 1996.

		Sapwood Condition												
		Hard (1)				Spongy (2)				Soft (3)				
Species and DBH	Heartwood condition	Hard (1)	Spongy (2)	Soft (3,D)	Total	Hard (1)	Spongy (2)	Soft (3,D)	Total	Hard (1)	Spongy (2)	Soft (3,D)	Total	Grand total
Balsam														
15.0-24.9 cm		16	10	1	27	7	9	0	16	0	0	0	0	43
25.0-34.9 cm		21	22	0	43	4	14	1	19	0	0	0	0	62
35.0-44.9 cm		6	7	0	13	2	11	4	17	0	2	1	3	33
>44.9 cm		1	6	4	11	0	9	1	10	0	0	0	0	21
Subtotal		44	45	5	94	13	43	6	62	0	2	1	3	159
Pine														
15.0-24.9 cm		11	1	0	12	0	1	0	1	0	1	0	1	14
25.0-34.9 cm		10	9	0	19	1	3	1	5	0	0	0	0	24
35.0-44.9 cm		5	3	0	8	0	4	1	5	0	1	0	1	14
>44.9 cm		1	1	0	2	0	0	0	0	0	0	0	0	2
Subtotal		27	14	0	41	1	8	2	11	0	2	0	2	54
Spruce														
15.0-24.9 cm		1	0	0	1	0	1	0	1	0	0	0	0	2
25.0-34.9 cm		13	7	2	22	1	7	0	8	1	0	2	3	33
35.0-44.9 cm		8	8	2	18	3	9	1	13	0	0	1	1	32
>44.9 cm		5	9	2	16	1	12	4	17	0	0	0	0	33
Subtotal		27	24	6	57	5	29	5	39	1	0	3	4	100
Unknown														
15.0-24.9 cm		0	0	0	0	1	0	0	1	0	0	0	0	1
25.0-34.9 cm		1	0	0	1	0	0	0	0	0	0	0	0	1
35.0-44.9 cm		1	0	0	1	0	0	0	0	0	0	0	0	1
>44.9 cm		0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal		2	0	0	2	1	0	0	1	0	0	0	0	3
All species		100	83	11	194	20	80	13	113	1	4	4	9	316

was found in this ratio between species (Table 13; $X^2_{(2\ df)} = 4.58$, P = 0.10). Stubs with spongy sapwood were most likely (71%) to have spongy heartwood as well (Table 13; $X^2_{(2\ df)} = 0.30$, P = 0.86). Only 9 stubs had soft sapwood so no statistical comparisons were possible for that category, but only 1 of these 9 had sound heartwood (Table 13). Primary cavity-excavating birds seemed to prefer nesting in stems with hard or spongy sapwood, and soft or very soft heartwood (Gyug 2002). Only 24 of the 316 stubs (7.6%) assessed for decay fit into this category. Further analyses of potential nesting sites in stubs are in Gyug (2002).

The majority (60%) of stubs had >75% bark remaining, 21% had 50-75% of bark remaining and 19% had <50% bark remaining with significant differences between species ($X^2_{(4\ df)}$ = 26.56, P < 0.001). Most (80%) spruce stubs had >75% of bark remaining but only 44% and 54% of pine and balsam stubs respectively had >75% of bark remaining. It would appear that spruce bark either decays more slowly, or sloughs off at slower rates than balsam and pine bark. The ratios of percentage-of-bark-remaining classes (60%-21%-19%) did not significantly vary with class of sapwood decay ($X^2_{(4\ df)}$ = 0.53, P = 0.97) so the extent of sapwood decay did not appear to correlate with percentage of bark remaining. One quarter (24%) of the decay-assessed stubs had sound roots, 60% had 75-99% of lateral roots free of decay and 16% had <75% of roots free from decay, with no differences between species ($X^2_{(4\ df)}$ = 2.95, P = 0.57).

4.4.3 Woodpecker Feeding Sign

Woodpecker feeding sign was recorded on half (49.3%; 156 of 316 stubs) of the stubs in the 20% decay-assessed stubs sample. However, the feeding sign on stubs was not equally distributed among the experimental cutblocks or between tree species. There was a significantly higher proportion ($X^2_{(2\ df)}$ = 39.21, P < 0.001) of overall feeding sign on balsam (62%, 99 of 159 stubs), average on spruce (49%, 49 of 100 stubs), and significantly lower on pine stubs (13%, 7 of 54 stubs). There was also a significantly higher proportion ($X^2_{(2\ df)}$ = 16.53, P < 0.001) of stubs with feeding sign in Block 5516 (60.3%; 85 of 141 stubs), the same proportion as average in Block 5547 (47.1%; 49 of 104 stubs), and a lower proportion in Block 5546 (31.0%; 22 of 71 stubs). The lower proportion of feeding sign in Block 5546 was consistent among all tree species: only 38% of balsam stubs and 30% of spruce showed feeding sign in Block 5546. This may have been because of overall lower woodpecker use of Block 5546 since there were only 2 woodpecker nests within Block 5546 in 1995-1996, compared to 6 nests within each of Blocks 5516 and 5547 (Gyug 2002).

Feeding activity was relatively high on balsam in all diameter classes, whereas the feeding sign on spruce stubs increased as stub diameter increased (Figure 9). There was relatively low use (<29%) of lodgepole pine stubs in all diameter classes, although the amount of feeding sign in the 35-44.9-cm DBH class was higher than for smaller diameter lodgepole pine stubs. There were only 2 lodgepole pine stubs in the largest diameter class (>44.9-cm DBH), so the observed level of woodpecker feeding sign is not considered to be a reliable estimate of their use for that diameter class.

The low percentage of woodpecker feeding sign on pine stubs at Donna Creek was very consistent with results from the Okanagan Highlands (Harris 1996), where only 18% of the lodgepole pine stubs examined had feeding sign. Also, woodpecker feeding rates on balsam stubs were higher than on pine stubs in both the Okanagan and Donna Creek studies. Feeding rates on spruce were relatively low in the Okanagan study (12%), but only 17 spruce stubs were examined in the Okanagan study compared to the 476 pine and 37 balsam stubs. As a result, this small sample may not have been representative. The highest woodpecker

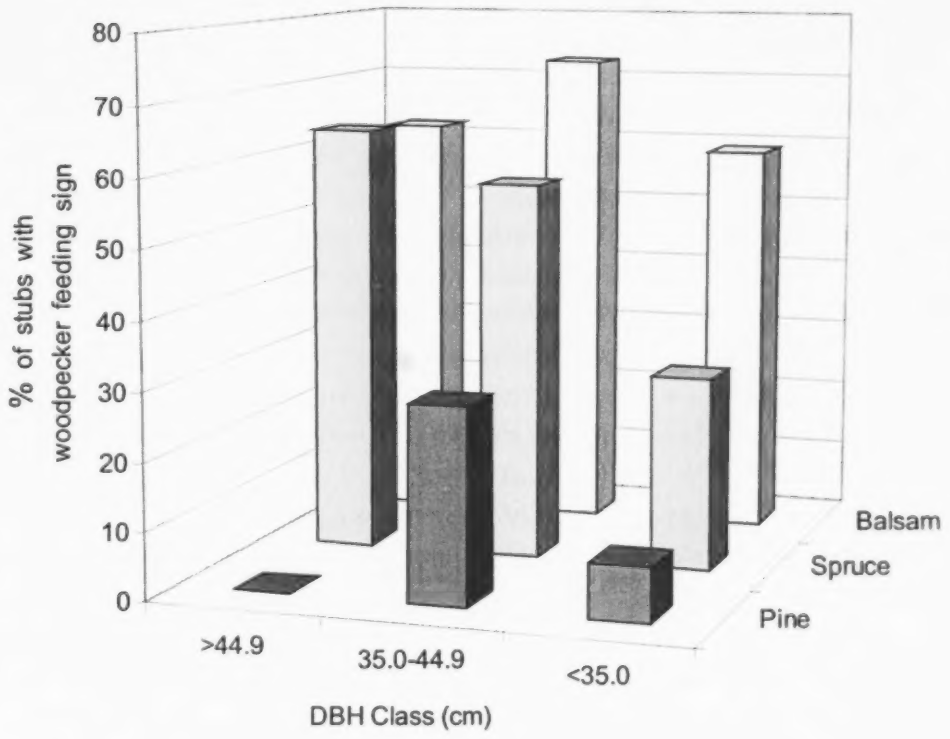

Figure 9. Percentage of stubs (includes dispersed stubs and perimeter stubs) ≥15-cm DBH with woodpecker feeding sign, by stub species and diameter (DBH class), in the 20% decay-assessed sample, Donna Creek Forestry/Biodiversity Project, 1996.

feeding rates (70-86%) on stubs in the Okanagan were on western redcedar (*Thuja plicata*), western larch (*Larix occidentalis*) and Douglas-fir (*Pseudotsuga menziesii*), none of which were present in the Donna Creek study area. In Bennett's (1994) stub study in the Okanagan Highlands, only pine stubs were present and 60% feeding rates were found. Clearly, lodgepole pine stubs can be heavily used for foraging by woodpeckers where it is the only species present, but if other tree species are present, they appear not to be used so highly. The particular bird species present in different areas may also have an influence on which tree species and/or types of tree stems are used for feeding. Black-backed woodpeckers appeared to be the most common woodpecker feeding on stubs at Donna Creek (Gyug 2002) but this species was not present or very uncommon in the Okanagan studies of Bennett (1994) and Harris (1996).

Within the experimental cutblocks, there was no significant difference ($X^2_{(1\ df)} = 0.0018$, P = 0.97) between the proportion of perimeter stubs that had woodpecker feeding sign (49.5%; 53 of 107 stubs) and the proportion of dispersed stubs that had woodpecker feeding sign (49.3%; 103 of 209 stubs). Dispersed stubs with signs of woodpecker feeding were found throughout the treatment areas, and there was no obvious correlation with distance to the surrounding old-growth forest. The estimated age of the feeding sign was not collected, so it is not known how much of the sign was recent (i.e., use correlated with known woodpecker cavity nests in the immediate vicinity) and how much may have occurred much earlier than the 1995-1996 study period.

In the Okanagan Highlands, Bennett (1994) found 60% of stubs in clearcut cutblocks had recent woodpecker feeding sign, and stubs with feeding sign were found throughout the cutblocks, not just near forested areas. However, Bennett (1994) did find that the proportion of stubs with recent woodpecker feeding sign was related to the density of stubs ($X^2_{(2\ df)} = 7.89$, P = 0.02; data from Table 3 in Bennett 1994), with a higher proportion (63%) of stubs being fed on in the high density stub treatments (30 stubs/ha) than in medium (55% in 10 stubs/ha areas) or low treatments (55% in 3 stubs/ha areas). This could not be examined in the Donna Creek project because only a single density of stubs was created by design.

Table 14. Animal use of cavities in stubs ≥15-cm DBH in the non-sampled tagged stubs and the 20% (1-in-5) decay-assessed stub sample, Donna Creek Forestry/Biodiversity Project, 1996.

Cavity type	Non-sampled tagged stubs	20% decay-assessed stub sample	Total
Bird-excavated cavities			
Inactive 1995-1996	6	3	9
Active 1995-1996	3	4	7
Total 1995-1996	9	7	16
Other cavities and burrows			
Trunk stem cavities (some with red squirrel sign)	2	1	3
Trunk root burrows (includes red squirrel and unknown burrows)	6	4	10

4.5 Animal Use of Cavities in Stubs

Cavities excavated by primary cavity-nesting birds and other cavities available inside stubs (e.g., squirrel dens) were noted at 29 stubs (Table 14). Bird-excavated cavities were noted at 16 stubs, 7 in the 20% decay-assessed sample and 9 in the rest of the stubs. There were significantly more cavities found in the 20% stub sample than might be expected based on the numbers of stubs examined compared to the number of cavity nests discovered in the rest of the tagged stubs ($X^2_{(1\ d.f.)} = 5.26$, $P = 0.02$). It would appear that bird-excavated cavities were much more likely to be discovered at decay-assessed stubs than other stubs that were not so thoroughly examined. The presentation and analyses of data from active cavity nests that were discovered in stubs in 1995-1996 and other stubs identified with cavities have been reported separately in Gyug (2002).

Dens, or potential dens, in hollowed-out cavities at the bases of stubs were found in 3 stubs (Table 14). The opening size of only one of these dens was described: 20 cm by 8 cm. A red squirrel cone cache was in one of the other 2 cavities, and all were probably used by red squirrels at some time. All den cavities were in balsam stubs, with stem diameters (DBH) of 31, 35 and 59 cm. There may have been other red squirrel dens in cavities at the bases of stubs, but red squirrel use of stubs was not an important component of the study and therefore not consistently assessed. One red squirrel natal den was observed in a cavity in a live tree that was located in a tree island (Isl 46-3) in Block 5546 (Joy and van den Driessche 1995), no further data was collected on that den site.

Red squirrel (*Tamiasciurus hudsonicus*) burrows and other unknown burrows, which were also probably red squirrel burrows, were also noted incidentally at the base of 10 stubs (Table 14); burrows typically accessed chambers that were under the stub's root mass. Species composition of these 10 stubs was 50% spruce and 50% balsam. Mean DBH for 6 of these stubs was 43.1 cm (SE = 3.3 cm) and the range was 30 to 65-cm DBH. The timing of use (pre or post-logging) of these burrows is unknown. Since identification of burrows at the base of stubs was not an important component of the study, data collection on these attributes were incidental and inconsistent. Therefore, the use of stubs by red squirrels should not be analyzed quantitatively given these inconsistencies in data collection.

4.6 Retention of Stems in Block 5547 (1992 to 1996)

Retention (or survivorship) of dispersed stubs in the harvested stub areas (**SB** and **SIh**) of Block 5547 was assessed from 1992 to 1996. For the same period, stem (live trees, snags and perimeter stubs) retention was also assessed within 4 tree islands: Isl 47-1 and 4 in the **TI** unit and Isl 47-6 and 8 in the **SI** unit. Murray (1992a) noted that many trees and snags in Isl 47-1 and 4 had already fallen -assumed to be caused by wind- after logging in 1991 but before the first stem counts in 1992.

4.6.1 Retention of Dispersed Stubs

Retention of dispersed stubs in the **SB** and **SIh** units of Block 5547 from 1992 to 1996 was very high at 97.1 and 97.4% respectively (Table 15). Only 10 of the 360 stubs had fallen over in the 4-year period, and only 2 of these were stubs that had been created from supposedly[3] live trees when the block was logged. For the remaining fallen stubs, 7 stubs were considered to be dead and with broken-off tops prior to or during logging (i.e., top not cut off by the feller-buncher) and 1 stub had been cut by the feller-buncher but was considered dead prior to logging.

The lowest retention rates (66.7-80.0%, Table 15) occurred among naturally-existing stubs that were classed as either Wildlife Tree Class 4 or 5. These stubs were already in advanced stages of decay and probably quite unstable, even before logging. The 3 common tree species were all represented amongst these stubs, and these stubs had a range of stem diameters (15 to 55-cm). This naturally-existing category of stubs, however, formed a small proportion (8%; Table 15) of the overall stubs in the experimental cutblocks, thus, even with a high fallover rate in this category, the overall retention rate of stubs was very high.

[3] The status (live or dead) of stubs was assessed in 1992, after logging had occurred (Murray 1992a), so the actual status of the stub's stem prior to being cut by the feller-buncher was not definitely known.

Table 15. Abundance of stubs ≥15.0-cm DBH by species, creation method and status when cut (live or dead), the number of stubs that fell over between 1992 and 1996, and the retention (survivorship) rates of these stubs in the **SB** and **SIh** units in Block 5547, Donna Creek Forestry/Biodiversity Project. Data based on 1992 and 1996 counts of dispersed tagged stubs. NC indicates data were Not Calculated because none of that species was present so no retention rate could be calculated.

	Block 5547							
	SB unit				**SIh** unit			
	Broken	Cut by feller-buncher			Broken	Cut by feller-buncher		
	Off [1]	Cut dead	Cut live	Total	Off [1]	Cut dead	Cut live	Total
1992 count								
Balsam	5	16	37	58	3	26	33	62
Pine	6	6	56	68	3	2	11	16
Spruce	4	12	60	76	4	13	61	78
Cottonwood	0	0	2	2	0	0	0	0
All species	15	34	155	204	10	41	105	156
No. fallen by 1996								
Balsam	1	0	0	1	1	1	1	3
Pine	3	0	0	3	0	0	0	0
Spruce	1	0	1	2	1	0	0	1
Cottonwood	NC	NC	0	0	NC	NC	NC	NC
All species	5	0	1	6	2	1	1	4
% retention from 1992 to 1996								
Balsam	80.0	100.0	100.0	98.3	66.7	96.2	97.0	95.2
Pine	50.0	100.0	100.0	95.6	100.0	100.0	100.0	100.0
Spruce	75.0	100.0	98.4	97.4	75.0	100.0	100.0	98.7
Cottonwood	NC	NC	100.0	100.0	NC	NC	NC	NC
All species	66.7	100.0	99.4	97.1	80.0	97.6	99.0	97.4

[1] Stubs were probably already dead and had their tops broken off prior to logging.

4.6.2 Stem Retention within Tree Islands

From 1992 to 1996, retention of perimeter stubs in the 2 tree islands assessed in the **SI** unit of Block 5547 (Isl 47-1 and 4) was very high (97-100%) as only 1 of 76 stubs fell during that period (Table 16). Retention rates for perimeter stubs around the 2 **TI** tree islands was unknown since they were not enumerated in 1992, but were probably very high since stub retention rates over that period were very high in general. Retention rates of live trees was lower than for the perimeter stubs, with Isl 47-1 having the lowest at 42%, followed by Isl 47-4 at 72%, Isl 47-6 at 75% and Isl 47-8 at 79% (Table 16). Retention rates of snags in 3 of the tree islands was relatively even with a range from 50 to 62% (Table 16). The fourth island (Isl 47-4) had only 2 snags, both of which did not fall between 1992 and 1996.

Table 16. Perimeter-stub, snag and live-tree abundance by tree species for stems ≥15-cm DBH, and percentage of stems fallen from 1992 to 1996 in 4 residual tree islands in Block 5547. NA indicates data Not Available because it was not collected. NC indicates Not Calculated, i.e., none of that species present or data was not available so retention rates could not be calculated.

	Tree-islands with relatively severe blowdown prior to 1992								Tree-islands with relatively little blowdown prior to 1992							
	Isl 47-1 **TI** unit				Isl 47-4 **TI** unit				Isl 47-6 **SI** unit				Isl 47-8 **SI** unit			
	Stubs [1]	Snags	Live	Total	Stubs [1]	Snags	Live	Total	Stubs	Snags	Live	Total	Stubs	Snags	Live	Total
1992 count																
Balsam	NA	8	21	NA	NA	1	24	NA	14	10	42	66	14	6	43	63
Pine	NA	0	0	NA	NA	0	0	NA	0	4	16	20	0	0	1	1
Spruce	NA	2	15	NA	NA	1	8	NA	24	3	29	56	24	2	26	52
All species	NA	10	36	NA	NA	2	32	NA	38	17	87	142	38	8	70	116
1996 count																
Balsam	NA	3	10	NA	NA	1	20	NA	14	5	35	54	14	5	38	57
Pine	NA	0	0	NA	NA	0	0	NA	0	3	9	12	0	0	1	1
Spruce	NA	2	5	NA	NA	1	3	NA	23	2	21	46	24	0	16	40
All species	46	5	15	66	40	2	23	65	37	10	65	112	38	5	55	98
No. fallen from 1992 to 1996																
Balsam	NA	5	11	NA	NA	0	4	NA	0	5	7	12	0	1	5	6
Pine	NA	NC	NC	NA	NA	NC	NC	NA	NC	1	7	8	NC	NC	0	0
Spruce	NA	0	10	NA	NA	0	5	NA	1	1	8	10	0	2	10	12
All species	NA	5	21	NA	NA	0	9	NA	1	7	22	30	0	3	15	18
% retention from 1992 to 1996																
Balsam	NC	37.5	47.6	NC	NC	100.0	83.3	NC	100.0	50.0	83.3	0.0	100.0	83.3	88.4	90.5
Pine	NC	NC	NC	NC	NC	NC	NC	NC	NC	75.0	56.3	0.0	NC	NC	100.0	100.0
Spruce	NC	100.0	33.3	NC	NC	100.0	37.5	NC	95.8	66.7	72.4	0.0	100.0	0.0	61.5	76.9
All species	NC	50.0	41.7	NC	NC	100.0	71.9	NC	97.4	58.8	74.7	0.0	100.0	62.5	78.6	84.5

[1] Perimeter stubs in the **TI** unit were counted in 1996 but no species designations were collected.

Since no stem counts were made prior to 1992, no precise estimate of stem retention within the tree islands of Block 5547 could be compared to pre-logging levels. Nevertheless, an approximate estimate can be made based on an estimated 533 standing stems/ha in Block 5547 prior to logging (Table 5), and by estimating the densities of stubs, live trees and snags based on counts in 1992 and 1996 (Table 16). The estimates in Table 5, however, were based on pre-harvest cruise summaries (see Murray 1992b) that used different diameter classes (i.e., 12.5 to 17.4-cm DBH) than the post-harvest stem counts, which used a 15-cm DBH lower limit (Table 16). Therefore, additional stem density estimates were calculated (Table 17) using the same diameter limits (>17.4-cm DBH) for comparisons between pre- and post-harvest. Since many of the stems had been made into stubs at the time of harvesting, the number of live tree and snags retained immediately after harvesting (i.e., in 1991) could only be estimated by subtracting the stub densities from the estimate of pre-harvest stem densities. In Isl 47-1 and 4, perimeter stubs were not counted in 1992 so no firm estimates of the 1991 to 1996 retention rates were possible, but since retention of stubs was very high, we have assumed 100% retention for these calculations.

In Isl 47-1 and 4, where Murray (1992a) suggested that considerable post-logging blowdown had occurred prior to the 1992 stem count, the estimated retention rate of live trees and snags was only 47% from 1991 to 1992, and only 27% from 1991 to 1996 (Table 17). However, if all stems including stubs were taken into account, the stem retention rate from 1991 (pre-harvest levels) to 1996 was 52% (Table 17), because the fallover rate for stubs was much lower than for standing trees and snags.

In Isl 47-6 and 8, where relatively little blowdown occurred from 1991 to 1992 (Murray 1992a), the estimated retention rate of live trees and snags was 87% from 1991 to 1992, and 64% from 1991 to 1996 (Table 17). However, if all stems including stubs were taken into account, the stem retention rate from 1991 (pre-harvest levels) to 1992 was 91%, and from 1991 to 1996 was 74% (Table 17).

It is not known why lower tree and snag retention occurred in Isl 47-1 and 4 in the first year post-logging (Murray 1992a) or later. Isl 47-6 and 8 were situated in the **SI** unit that also had dispersed stubs throughout its harvested area but it is very unlikely that the dispersed stubs were acting as a windbreak that would reduce blowdown. None of the islands were considered to be in a different moisture regime as all 50-m radius plots at these tree islands were considered to have a mesic moisture regime. The tree islands were also all on the same southwest-facing aspect, on similar slopes and at similar elevations in the cutblock.

Table 17. Numbers, densities (stems/ha), and estimated retention rates (% remaining standing) for stubs and for snags and live trees ≥17.5-cm DBH in 4 residual tree islands in Block 5547, Donna Creek Forestry/Biodiversity Project, 1991-1996. Estimated density prior to logging was 533 stems/ha based on pre-harvest cruise summaries of 1988 as reproduced in Murray (1992b).

	Stubs		Snags and live trees		Total stems		Stubs		Snags and live trees		Total stems	
Island no.	47-1	47-4	47-1	47-4	47-1	47-4	47-6	47-8	47-6	47-8	47-6	47-8
Area (ha)	0.29	0.20	0.28	0.18			0.25	0.24	0.26	0.24		
Estimated density immediately after logging in 1991 [a]	159	200	374	333	533	533	148	154	385	379	533	533
1992 count [b]	46	40	46	30			37	37	97	70		
1992 density [c]	159	200	164	167	323	367	148	154	373	292	521	446
1996 count	46	40	20	22			36	37	69	53		
1996 density [c]	159	200	71	122	230	322	144	154	265	221	409	379
% retention from 1991 to 1992 [d]	100		47		65		100		87		91	
% retention from 1991 to 1996 [d]	100		27		52		99		64		74	

[a] Estimated based on assumption of 100% stub retention rate from 1991 to 1992, and by subtracting stub densities from total pre-harvest stem densities.

[b] Estimated for perimeter stubs in Isl 47-1 and 47-4 based on assumption of 100% retention until 1996 since stubs were not counted in 1992.

[c] Estimated total stem density is the sum of the stub and the snag and live tree density estimates.

[d] Estimates were combined for Isl 47-1 and 47-4 and for Islands 47-6 and 47-8 based on rough visual estimates of extent of blowdown in 1992 (Murray 1992a) and to increase reliability of estimated retention rates since estimates of pre-harvest stem density have limited reliability for very small areas.

If no stubs had been created at the perimeter of the tree islands, then the overall loss of stems in the tree islands would likely have been higher than what was actually observed, since trees and snags fell over at higher rates than the stubs. In this spruce-balsam forest type, the effect of creating perimeter stubs around small 0.25-ha tree islands might be described as a short-term hedge against very high blowdown losses that may occur in these small tree islands just after logging. By converting trees to stubs, the stems are more likely to withstand the increased exposure to wind, thus they are more likely to remain standing and be available for cavity-using animals.

However, this short term hedge, i.e., keeping the maximum number of stems standing and available to cavity-using animals by converting them to stubs, must be balanced by the long-term implications. While, in the short term, stubs are more likely to stand than trees where exposure to winds is high, stubs are more likely to fall in the long term as they decay. Keeping some trees as living whole trees will probably be essential to providing opportunities for cavity-using animals on the long term since the stubs will likely fall over before all the living trees. An alternative method to hedging blowdown losses in small tree islands would be to make the tree islands larger. However, even larger tree islands of 1 to 2 ha can still be very susceptible to blowdown (Gyug and Bennett 1995).

The creation of stubs in preference to retaining trees and/or snags must also be balanced against the possible reduction of potential nest sites in the shorter stubs versus the taller trees or snags. None of the perimeter stubs around the 4 assessed tree islands in Block 5547 were used for cavity-nesting in 1995 or 1996, although 3 snags were used for nesting (Gyug 2002). In 1995 and 1996 in the other experimental cutblocks, however, 2 perimeter stubs were used for nesting in tree islands where no snags or live-trees were used for nesting (Gyug 2002). There is also the possibility that cavity sites in trees may be more protected from predators because they may be higher and sheltered by branches. So, while stubbing some trees at the edges of tree islands might be thought of as a hedge against blowdown of whole trees or snags, the cavity-nesting bird data at Donna Creek (Gyug 2002) would not support the wholesale creation of stubs in preference to retention of whole trees or snags in these tree islands, but would support a mix of harvest strategies, i.e., both the creation of stubs and the retention of live trees and snags in tree islands.

The tree species composition of these 4 tree islands was not the same as the species composition of the entire block prior to logging (Table 5). Lodgepole pine stems were only present in very small numbers in those tree islands (0-15% of trees and snags per tree island; Table 16). However, lodgepole pine stems were present as a relatively large proportion (24%) of the block as a whole prior to logging (Table 5) and also as a relatively large proportion of the dispersed stubs (23%, Table 15). This disparity, at least partially, may be explained by looking at the spatial distribution of stem species. The **SB** unit situated on the valley floor had a higher proportion of dispersed lodgepole pine stubs (33%, Table 16) than the **SIh** unit on the hillside where the tree islands were located (10% lodgepole pine stubs, Table 16). Nevertheless, not one of the 76 perimeter stubs around Isl 47-6 and 8 were lodgepole pine, even though about 10% of the trees and snags in these same tree islands were lodgepole pine (Table 16). Lodgepole pine did not seem to be avoided for stub creation

elsewhere in the experimental cutblocks or within Block 5547 (see section 4.3.3), so it is not known why this was the case for Isl 47-6 and 8.

4.7 Other Standing Trees within Harvested Blocks

Block 5547 was the only site that contained mature cottonwood trees, even before timber harvesting occurred. Twenty-two cottonwood trees were GPS-traversed in 1996, 9 of which had been tagged in 1992 (see Appendix D). Eleven cottonwood trees were left standing within the harvested area along the stream that bisected the **CT** and **SB** units, 6 trees were left along the stream-cutblock perimeter interface in the southern corner of the block, and 5 cottonwood trees were situated in the upland harvested area near the southwest boundary of the block.

In the **SB** and **SIh** units of Block 5547, 32 standing, non-merchantable conifer trees ≥15-cm DBH located outside of the tree islands were tagged in 1992 (Appendix 5), but they were not GPS-traversed in 1996. Therefore, exact locations for these 32 tagged stems are unknown, but 14 stems were located in the **SB** unit and 18 stems in the **SIh** unit. All stems were 15 to 19-cm DBH, with the majority (84%) between 15 and 18 cm. Any stems that were >17-cm DBH were balsam; spruce stems >17-cm DBH are generally considered merchantable and therefore would have been logged. Most (84%) of these trees were balsam with the rest being spruce. One of the 32 stems was standing dead, and was possibly dead before logging. Within the **SB** and **SIh** units of Block 5547, the densities of residual standing non-merchantable trees ≥15-cm DBH were 0.36 and 0.72 stems/ha respectively. Numbers and densities of standing non-merchantable conifer trees in the control cutblocks and all the other experimental treatment units is unknown.

There was the occasional clump of young regenerating conifers (diameters <15-cm DBH) and patches of alder growth left sporadically throughout the experimental cutblocks, with 15 of these GPS-traversed in 1996: 10 in Block 5547, 4 in Block 5546 and 1 in Block 5516 (Appendix F). No such patches were present in the surveyed portions of the Clearcut Control cutblocks.

5.0 RECOMMENDATIONS

5.1 Future Comparisons Possible Using This Data

It was not the intent of this report to provide specific future direction to this project, but to provide summaries of the physical and vegetative data for future comparisons or correlation with wildlife use, as well as document the stub and tree-island characteristics for future comparisons. Long-term comparisons that can be made with the data presented in this report include:

- Retention or survivorship rates of the entire tagged stub population by species and DBH classes,
- Retention or survivorship rates of trees, snags and perimeter stubs within the 4 monitored islands in Block 5547 (Isl 47-1, 4, 6 and 8),
- Retention or survivorship rates of stubs in the 20% decay-assessed stub sample by decay class of the stub, as well as by species and DBH classes,
- Decay rates of the 20% stub sample,
- Numbers of newly excavated cavity nests in the entire stub population since 1996, correlated with stub species, DBH and location, and
- Numbers of newly excavated cavity nests and woodpecker feeding sign in the 20% stub sample based on previous and current stub decay status, as well as species, DBH and location.

Although the monitoring of tree-island stem retention rates was not part of the original study design (Dawson et al. 1992), obtaining a more complete estimate of these rates by estimating fallover rates for the remainder of the tree islands would provide data for more accurate comparisons of tree-island use by cavity-using animals.

Any detailed analysis of the vegetative and physical data will primarily be looking for correlation with wildlife data, and should therefore use the original data in digital format, rather than any summaries presented in this report. Further phases of the Donna Creek project should carefully examine this document, the data, and other reports in this project series to determine which are the most important physical, vegetative or other habitat characteristics that are likely to influence the species or species group under study. It should not be necessary to collect a full set of physical or vegetative data in the future because all attributes might not be considered relevant to the species or wildlife group being examined.

5.2 Future Stub Survey Methods

Specific recommendations for future stub surveys are to:

1. Make future field survey sheets based on the Excel files used in the Appendices so that previously collected information is accessible in the field as the new information is being collected. This will permit future surveyors to immediately identify any data inconsistencies that need to be rectified in the field.

2. Make a series of field maps (8.5"x11" to 11"x17" in size) at a suitable scale (e.g., 1:2,500 for dispersed stubs and 1:500 for individual tree islands) that will show the location and label of every stub, point-count station and any other feature that has a GPS location in the cutblocks. These maps will allow future surveyors to orient themselves in the field, check off stubs or other features as they collect data (thus ensuring no features are missed), and add any features that may have been missed during earlier tagging or GPS-traverses. Only with this detailed information can surveyors ensure that any stubs or other features not found have actually fallen down and were not just accidentally missed during field survey work. This will be especially important as the vegetation succession in the cutblocks advance, and the stubs and other features consequently become more difficult to find.

3. Record the estimated age of the woodpecker feeding sign on the decay-assessed stubs in order to determine the approximate timing of such use, i.e., FRESH if the wood or under-bark area is unweathered (usually within one-year of use), or OLD if the exposed wood or area is grey and weathered.

4. Examine all stubs more thoroughly for the presence of bird-excavated cavities since it appeared that cavities were more likely to be discovered in stubs during the thorough decay assessment than during a cursory inspection.

6.0 GLOSSARY

CT - Clearcut Treatment unit; 1 of 4 treatment units within each of the experimental cutblocks (Blocks 5516, 5546 and 5547) that has no dispersed stubs and no tree islands present.

SB - Stub Treatment unit; 1 of 4 treatment units within each of the experimental cutblocks (Blocks 5516, 5546 and 5547) that has dispersed stubs present but no tree islands.

TI - Tree-Island Treatment unit; 1 of 4 treatment units within each of the experimental cutblocks (Blocks 5516, 5546 and 5547) that has tree islands present but no dispersed stubs.

SI - Stub-and-Island Treatment unit; 1 of 4 treatment units within each of the experimental cutblocks (Blocks 5516, 5546 and 5547) that has both dispersed stubs and tree islands present.

OG - Old-Growth Control area; 1 of 3 areas situated within the old-growth forest adjacent to each of the experimental cutblocks (Blocks 5516, 5546 and 5547).

CC - Clearcut Control unit; the sampled portion (approximately one-quarter) of each control cutblock (Blocks 5510, 5549 or 5550) that has been logged using traditional clearcut harvesting techniques.

TIi - the tree-island component (3 to 4 tree islands) within a **TI** treatment unit.

SIi - the tree-island component (3 to 4 tree islands) within a **SI** treatment unit.

TIh - the timber-harvested portion of a **TI** treatment unit; a clearcut area with no dispersed stubs.

SIh - the timber-harvested portion of a **SI** treatment unit; a clearcut area with dispersed stubs.

Stub - a tall tree stump created by high-cutting a tree at about 3 m in height using a feller-buncher at the time of timber harvesting. A minor percentage of the stubs in this project were also created by stem breakage (natural or otherwise), either caused at the time of timber harvesting or prior to timber harvesting. These broken-topped stems were also counted as stubs if they were standing in a timber-harvested area, and about 3 m in height.

Tree island – a residual patch of forest (approximately 0.25 ha) that was retained within the greater clearcut portion of the **SI** and **TI** treatment units. Each tree island (except Isl 16-2) also had a fringe of stubs created around its perimeter (see perimeter stubs).

Perimeter stubs – the stubs found around the fringe of each tree island.

Dispersed stubs – the stubs found distributed fairly evenly throughout the timber-harvested portion of the **SB** and **SI** treatment units.

DBH – the measured diameter of a stem (tree, stub or snag) taken at breast-height (1.3 m).

GPS - Global Positioning System

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APPENDICES

The 7 appendices include all labelled features and all GPS-traversed point-features in the Donna Creek study area, 1992-1996. There is no overlap of tagged features or GPS-traversed features in these appendices, except for Appendix G that contains is the data for the 20% decay-assessed stub sample; Appendix G does not include the location data for the stubs since that information is in Appendix B. The Excel file (***Donna_Creek_Stubs_2001_Final_Appendices.xls***) from which these appendices are derived is designed to be turned into field sheets (after some modifications) for future stub surveys.

All UTM co-ordinates are located in Zone 10 and are presented in meters, rounded off to the nearest meter or, for stubs, the nearest decimeter. Precision is available to 3 decimal places (i.e., to the mm) in the GIS files for some of the features, but the 5-m accuracy of the original GPS traverses do not really warrant presenting that level of precision in these appendices.

Appendix A. Location co-ordinates and characteristics of point-count stations, Donna Creek Forestry/Biodiversity Project, 1996: Station ID number, Block, Unit, Tree-island number, UTM co-ordinates (Zone 10, in m) and Elevation (m).

Station ID	Block	Unit	Tree-Island	Easting	Northing	Elev.
10CC1	5510	CC		422054	6164132	1014
10CC2	5510	CC		421992	6164244	1024
10CC3	5510	CC		421919	6164369	1024
10CC4	5510	CC		421808	6164317	1012
10CC5	5510	CC		421706	6164324	1001
10CC6	5510	CC		421742	6164195	996
10CC7	5510	CC		421884	6164078	998
16CC1	5516	CT		424083	6163515	1310
16CC2	5516	CT		424036	6163631	1314
16CC3	5516	CT		423975	6163747	1313
16CC4	5516	CT		423873	6163672	1294
16CC5	5516	CT		423747	6163676	1273
16CC6	5516	CT		423651	6163597	1247
16CC7	5516	CT		423538	6163559	1227
16OG1	OG1 - SW of 5516	OG		422440	6164074	1077
16OG2	OG1 - SW of 5516	OG		422483	6163908	1074
16OG3	OG1 - SW of 5516	OG		422531	6163739	1050
16OG4	OG1 - SW of 5516	OG		422556	6163575	1046
16OG5	OG1 - SW of 5516	OG		422583	6163414	1060
16OG6	OG1 - SW of 5516	OG		422716	6163280	1052
16OG7	OG1 - SW of 5516	OG		422857	6163182	1057

Station ID	Block	Unit	Tree-Island	Easting	Northing	Elev.
16SB1	5516	SB		423214	6163918	1244
16SB2	5516	SB		423141	6164019	1230
16SB3	5516	SB		423089	6164135	1223
16SB4	5516	SB		422967	6164148	1197
16SB5	5516	SB		423005	6164027	1196
16SB6	5516	SB		422990	6163898	1177
16SB7	5516	SB		422865	6163934	1158
16SI1	5516	SI		423518	6164427	1315
16SI2	5516	SI	Isl 16-5	423577	6164327	1333
16SI3	5516	SI		423627	6164219	1341
16SI4	5516	SI	Isl 16-6	423547	6164131	1302
16SI5	5516	SI		423470	6164274	1309
16SI6	5516	SI		423370	6164347	1285
16SI7	5516	SI		423414	6164168	1295
16SI8	5516	SI		423397	6164002	1279
16SI9	5516	SI	Isl 16-3	423307	6164100	1269
16SI10	5516	SI	Isl 16-4	423225	6164273	1253
16SI11	5516	SI		423130	6164316	1236
16TI1	5516	TI		422979	6163637	1145
16TI2	5516	TI	Isl 16-2	423097	6163616	1163
16TI3	5516	TI	Isl 16-2	423230	6163736	1249
16TI4	5516	TI		423293	6163793	1254
16TI5	5516	TI		423345	6163681	1247
16TI6	5516	TI		423232	6163597	1194
16TI7	5516	TI	Isl 16-7	423402	6163896	1282
16TI8	5516	TI		423510	6163966	1310
16TI9	5516	TI	Isl 16-8	423619	6163832	1290
16TI10	5516	TI		423646	6163944	1321
16TI11	5516	TI	Isl 16-1	423626	6164058	1351
16TI12	5516	TI		423754	6163966	1321
46CC1	5546	CT		420472	6165804	1045
46CC2	5546	CT		420559	6165897	1078
46CC3	5546	CT		420472	6166003	1084
46CC4	5546	CT		420389	6166107	1091
46CC5	5546	CT		420442	6166220	1126
46CC6	5546	CT		420535	6166138	1120
46CC7	5546	CT		420620	6166043	1115
46OG1	OG2 - 5546/5547	OG		419167	6166702	1020
46OG2	OG2 - 5546/5547	OG		419270	6166842	1043
46OG3	OG2 - 5546/5547	OG		419366	6166975	1100
46OG4	OG2 - 5546/5547	OG		419453	6167124	1112
46OG5	OG2 - 5546/5547	OG		419547	6167262	1143
46OG6	OG2 - 5546/5547	OG		419609	6167413	1196
46OG7	OG2 - 5546/5547	OG		419662	6167571	1240
46SB1	5546	SB		420205	6165757	1018
46SB2	5546	SB		420098	6165829	1008

Station ID	Block	Unit	Tree-Island	Easting	Northing	Elev.
46SB3	5546	SB		419983	6165877	1003
46SB4	5546	SB		420038	6166012	1011
46SB5	5546	SB		420100	6166069	1033
46SB6	5546	SB		420166	6165963	1027
46SB7	5546	SB		420247	6165870	1026
46SI1	5546	SI		419450	6166613	1032
46SI2	5546	SI		419564	6166613	1050
46SI3	5546	SI		419650	6166530	1041
46SI4	5546	SI	Isl 46-3	419703	6166436	1026
46SI5	5546	SI	Isl 46-2	419782	6166341	1028
46SI6	5546	SI		419873	6166266	1026
46SI7	5546	SI	Isl 46-1	419993	6166241	1033
46SI8	5546	SI		419933	6166133	1023
46SI9	5546	SI		419899	6166073	1008
46SI10	5546	SI		419597	6166777	1069
46TI1	5546	TI		420110	6166361	1074
46TI2	5546	TI	Isl 46-6	420079	6166535	1063
46TI3	5546	TI		420021	6166646	1083
46TI4	5546	TI	Isl 46-5	419887	6166717	1084
46TI5	5546	TI		419853	6166858	1103
46TI6	5546	TI		419723	6166843	1087
46TI7	5546	TI	Isl 46-4	419681	6166656	1067
46TI8	5546	TI		419779	6166585	1057
46TI9	5546	TI		419877	6166518	1056
46TI10	5546	TI		419967	6166427	1052
47CC1	5547	CT		419092	6167105	1056
47CC2	5547	CT		418901	6167108	1039
47CC3	5547	CT		418798	6167037	1024
47CC4	5547	CT		418723	6166935	1016
47CC5	5547	CT		418788	6166828	1014
47CC6	5547	CT		418664	6166814	1013
47CC7	5547	CT		418566	6166747	1014
47OG1	OG3 - 5547	OG		418532	6168068	1139
47OG2	OG3 - 5547	OG		418386	6167952	1103
47OG3	OG3 - 5547	OG		418283	6167869	1081
47OG4	OG3 - 5547	OG		418179	6167733	1071
47OG5	OG3 - 5547	OG		418120	6167640	1055
47OG6	OG3 - 5547	OG		418033	6167430	1037
47OG7	OG3 - 5547	OG		417962	6167272	1037
47SB1	5547	SB		418599	6167497	1055
47SB2	5547	SB		418657	6167366	1048
47SB3	5547	SB		418592	6167244	1029
47SB4	5547	SB		418461	6167246	1030
47SB5	5547	SB		418343	6167266	1033
47SB6	5547	SB		418366	6167104	1025
47SB7	5547	SB		418391	6166959	1020

Station ID	Block	Unit	Tree-Island	Easting	Northing	Elev.
47SI1	5547	SI		419490	6167575	1181
47SI2	5547	SI	Isl 47-5	419328	6167603	1153
47SI3	5547	SI		419407	6167477	1138
47SI4	5547	SI	Isl 47-7	419379	6167311	1129
47SI5	5547	SI		419248	6167220	1092
47SI6	5547	SI	Isl 47-8	419116	6167248	1080
47SI7	5547	SI		418995	6167267	1058
47SI8	5547	SI		419075	6167351	1079
47SI9	5547	SI	Isl 47-6	419150	6167442	1114
47SI10	5547	SI		419244	6167350	1116
47SI11	5547	SI		419275	6167465	1126
47TI1	5547	TI		418719	6167859	1107
47TI2	5547	TI	Isl 47-2	418772	6167963	1135
47TI3	5547	TI		418903	6168037	1171
47TI4	5547	TI		418932	6167885	1150
47TI5	5547	TI	Isl 47-3	419038	6167764	1149
47TI6	5547	TI		419034	6167617	1122
47TI7	5547	TI	Isl 47-4	418899	6167636	1104
47TI8	5547	TI		418835	6167790	1118
47TI9	5547	TI	Isl 47-1	418663	6167717	1080
47TI10	5547	TI		418748	6167583	1077
47TI11	5547	TI		418869	6167500	1078
49CC1	5549	CC		415487	6169861	1147
49CC2	5549	CC		415590	6169775	1153
49CC3	5549	CC		415669	6169672	1158
49CC4	5549	CC		415782	6169585	1165
49CC5	5549	CC		415862	6169692	1188
49CC6	5549	CC		415783	6169809	1193
49CC7	5549	CC		415704	6169921	1206
50CC1	5550	CC		414651	6170800	1214
50CC2	5550	CC		414633	6170923	1234
50CC3	5550	CC		414576	6171029	1237
50CC4	5550	CC		414492	6171125	1239
50CC5	5550	CC		414403	6171216	1245
50CC6	5550	CC		414327	6171092	1201
50CC7	5550	CC		414423	6170973	1191

Appendix B. Characteristics and location descriptions of stubs created in the experimental cutblocks (Blocks 5516, 5546 and 5547) and Block 5549, Donna Creek Forestry/Biodiversity Project, 1992-1996: Tag numbers[a], Block, Unit, Tree-island number, UTM co-ordinates (Zone 10, in m), Elevation (m), Species, Diameter at breast-height (DBH in cm), Whether the stub was cut off by feller-buncher during timber harvesting, and Whether the stub was part of the 20% (1-in-5) decay-assessed stub sample (see Appendix G for details on those stubs). All stubs tagged , and/or GPS-traversed are included in this appendix, even those <15-cm DBH. However, not all stubs <15-cm DBH were GPS-traversed or tagged, so analyses need to discard all stubs <15-cm DBH from this dataset. DBH indicated as 0 were not recorded, but any <15-cm DBH are indicated in the Comments column.

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
1	47	SB		418694.3	6167065.1	1011	balsam	30	cut	no	
5	47	SB		418655.8	6166984.9	1012	spruce	38	cut	no	
6	47	SB		418631.7	6166960.7	1011	balsam	30	cut	no	
7	47	SB		418601.2	6166923.2	1014	spruce	42	cut	no	
8	47	SB		418580.1	6166939.9	1014	balsam	38	cut	1in5	47NP06 - no cavity in 1992
9	47	SB		418569.1	6166925.2	1013	balsam	34	cut	no	
11	47	SB		418550.1	6166955.2	1014	pine	30	cut	no	
12	47	SB		418625.5	6166899.4	1007	spruce	41	cut	no	
13	47	SB		418579.2	6166983.7	1014	balsam	44	cut	no	
14	47	SB		418634.9	6167024.3	1013	balsam	47	cut	1in5	
15	47	SB		418658.3	6167057.2	1011	cottonw.	46	cut	no	
20	47	SB		418627.4	6167067.5	1012	balsam	33	cut	no	
21	47	SB		418602.1	6167075.4	1015	spruce	39	cut	no	
22	47	SB		418608.6	6167038.4	1014	spruce	40	cut	1in5	
23	47	SB		418577.6	6167047.1	1016	spruce	41	cut	no	
24	47	SB		418553.6	6167067.0	1016	balsam	49	cut	1in5	
25	47	SB		418579.8	6167080.1	1016	balsam	36	cut	no	
28	47	SB		418504.4	6166884.3	1010	spruce	47	cut	no	
29	47	SB		418488.8	6166871.4	1009	spruce	39	cut	no	
30	47	SB		418514.5	6166866.2	1010	spruce	33	cut	1in5	
31	47	SB		418528.4	6166853.5	996	pine	38	cut	no	
32	47	SB		418513.8	6166835.9	1002	spruce	59	cut	no	
33	47	SB		418491.9	6166837.3	1008	balsam	32	cut	no	
34	47	SB		418461.4	6166849.3	1010	spruce	38	cut	no	
35	47	SB		418485.1	6166797.2	1008	spruce	69	broken	1in5	
36	47	SB		418475.8	6166810.9	1007	balsam	20	broken	no	
37	47	SB		418460.7	6166803.6	1008	spruce	45	cut	no	
38	47	SB		418449.6	6166817.4	1010	balsam	39	broken	no	
39	47	SB		418436.3	6166835.2	1008	balsam	30	cut	no	
40	47	SB		418437.9	6166836.2	1008	balsam	26	cut	no	
41	47	SB		418414.5	6166808.5	1007	balsam	18	cut	no	
42	47	SB		418416.9	6166809.2	1007	pine	28	cut	1in5	
43	47	SB		418438.2	6166790.4	1008	balsam	29	cut	no	
45	47	SB		418464.7	6166774.0	1009	pine	35	cut	no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
46	47	SB		418425.6	6166764.1	1006	spruce	41	cut	no	
47	47	SB		418440.0	6166747.8	1006	spruce	39	cut	no	
48	47	SB		418423.9	6166724.7	1006	balsam	29	cut	no	
49	47	SB		418410.7	6166702.6	1006	spruce	47	cut	no	
51	47	SB		418393.9	6166731.7	1006	balsam	32	cut	1in5	
52	47	SB		418388.7	6166772.9	1007	pine	35	cut	no	
54	47	SB		418366.0	6166745.9	1008	spruce	0	cut	no	
56	47	SB		418338.9	6166774.5	1008	balsam	35	cut	no	
57	47	SB		418322.2	6166789.8	1008	spruce	58	cut	no	
58	47	SB					pine	49	broken		not found in 1996
59	47	SB		418323.1	6166840.2	1008	balsam	53	cut	no	
60	47	SB		418358.8	6166850.2	1010	pine	25	cut	no	
61	47	SB		418356.6	6166830.1	1008	pine	45	cut	1in5	
62	47	SB		418368.0	6166799.6	1007	pine	39	cut	1in5	
63	47	SB		418378.9	6166816.6	1008	pine	35	cut	no	
64	47	SB		418408.1	6166836.5	1011	pine	39	cut	no	
65	47	SB		418436.3	6166868.7	1010	spruce	36	cut	no	
66	47	SB		418467.6	6166895.3	1010	spruce	42	cut	no	
67	47	SB		418387.6	6166889.0	1011	balsam	30	cut	no	
68	47	SB		418351.6	6166899.0	1011	pine	33	cut	no	
69	47	SB		418401.3	6166940.0	1011	pine	32	cut	no	
70	47	SB		418429.9	6166921.3	1012	balsam	27	cut	no	
71	47	SB		418440.4	6166953.4	1011	spruce	34	cut	no	
72	47	SB		418454.4	6166974.3	1011	pine	32	cut	1in5	
73	47	SB		418444.8	6167111.5	1017	spruce	30	cut	no	
74	47	SB		418420.0	6167112.6	1018	pine	45	cut	no	
76	47	SB		418390.2	6167100.2	1018	pine	46	cut	no	
77	47	SB		418396.0	6167065.9	1016	pine	34	cut	1in5	
78	47	SB		418419.1	6167057.2	1015	spruce	49	cut	no	
79	47	SB		418442.5	6167028.7	1014	balsam	38	cut	no	
80	47	SB		418421.3	6166989.2	1009	pine	33	cut	no	
81	47	SB		418413.3	6166976.6	1010	spruce	31	cut	1in5	
82	47	SB					balsam	16			not found in 1996
83	47	SB		418396.4	6167008.6	1013	balsam	30	cut	1in5	
84	47	SB		418365.7	6167024.4	1016	pine	41	cut	no	
85	47	SB		418363.9	6167024.8	1016	pine	16	cut	no	
86	47	SB		418340.5	6166974.6	1011	spruce	37	cut	1in5	
87	47	SB		418319.2	6166965.5	1012	pine	36	cut	1in5	
88	47	SB		418302.5	6166950.5	1008	pine	36	cut	no	
95	47	SB		418294.4	6166903.9	1010	spruce	43	broken	no	
97	47	SB		418239.5	6166949.7	1011	balsam	36	cut	no	
98	47	SB		418262.8	6166975.1	1012	balsam	26	cut	no	
99	47	SB		418482.4	6167336.5	1025	balsam	35	cut	no	
101	47	SB		418509.6	6167317.7	1025	balsam	37	cut	no	
103	47	SB		418503.5	6167347.1	1026	cottonw.	32	cut	no	
104	47	SB		418240.9	6166981.1	1012	spruce	31	cut	no	
105	47	SB		418216.0	6167050.5	1015	balsam	41	cut	no	
106	47	SB		418265.9	6167052.5	1014	pine	36	cut	1in5	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
107	47	SB		418289.4	6167004.7	1012	pine	33	cut	1in5	
108	47	SB		418312.8	6167008.6	1013	pine	29	cut	no	
109	47	SB		418310.8	6167075.4	1016	pine	33	cut	no	
110	47	SB					pine	16	broken		not found in 1996
111	47	SB		418356.9	6167066.6	1015	balsam	40	cut	no	
112	47	SB		418325.8	6167114.7	1016	pine	33	cut	no	
113	47	SB		418349.7	6167121.7	1017	pine	27	broken	no	
114	47	SB		418352.7	6167121.8	1017	balsam	24	cut	no	
115	47	SB		418372.7	6167150.1	1018	pine	29	cut	1in5	
116	47	SB		418357.1	6167184.5	1019	pine	29	cut	1in5	
117	47	SB		418385.1	6167217.7	1021	pine	28	cut	no	
118	47	SB		418413.2	6167212.7	1020	pine	45	cut	no	
119	47	SB		418433.1	6167170.3	1020	balsam	42	cut	no	
120	47	SB		418439.0	6167286.3	1024	balsam	39	cut	1in5	
121	47	SB		418463.4	6167224.5	1022	balsam	0	cut	no	
122	47	SB		418445.4	6167230.8	1020	balsam	38	cut	no	
123	47	SB		418421.9	6167249.9	1024	pine	35	cut	1in5	
124	47	SB		418399.6	6167281.2	1024	pine	43	cut	no	
125	47	SB		418390.4	6167245.2	1022	pine	30	cut	no	
126	47	SB		418365.3	6167262.3	1023	pine	30	cut	1in5	
127	47	SB		418338.3	6167270.5	1023	pine	32	cut	no	
128	47	SB		418328.5	6167238.6	1021	pine	41	cut	no	
129	47	SB		418331.2	6167238.7	1021	pine	16	cut	1in5	
130	47	SB		418349.5	6167231.6	1021	pine	37	cut	no	
131	47	SB		418326.8	6167176.5	1018	pine	38	cut	no	
132	47	SB		418300.6	6167153.4	1018	pine	28	cut	no	
133	47	SB		418292.1	6167205.8	1023	balsam	25	cut	no	
134	47	SB		418277.4	6167185.0	1021	pine	29	broken	1in5	
135	47	SB		418256.4	6167167.2	1019	pine	27	cut	no	
136	47	SB		418269.7	6167133.7	1017	pine	24	broken	no	
137	47	SB		418271.1	6167110.8	1017	pine	45	cut	no	
138	47	SB		418253.7	6167089.7	1016	balsam	22	cut	no	
139	47	SB		418234.5	6167130.7	1017	pine	24	cut	no	
140	47	SB		418212.5	6167095.9	1014	pine	28	cut	1in5	
141	47	SB		418145.3	6167114.7	1025	balsam	40	cut	no	
142	47	SB		418158.4	6167142.0	1017	pine	39	cut	no	
143	47	SB		418156.8	6167142.9	1017	balsam	16	cut	no	
144	47	SB		418172.2	6167136.9	1017	pine	35	cut	no	
145	47	SB		418199.3	6167190.4	1023	pine	39	cut	1in5	
146	47	SB		418237.3	6167191.9	1019	pine	30	cut	no	
147	47	SB		418249.0	6167244.5	1026	pine	40	cut	no	
148	47	SB		418282.9	6167238.6	1023	pine	43	cut	no	
149	47	SB		418318.4	6167270.2	1027	pine	37	cut	no	
150	47	SB		418311.7	6167318.3	1027	pine	38	cut	no	
151	47	SB		418342.1	6167304.1	1028	pine	33	cut	no	
152	47	SB		418373.4	6167293.0	1027	pine	28	cut	no	
153	47	SB		418743.8	6167278.4	1032	spruce	48	cut	no	
154	47	SB					spruce	46	cut	no	not found in 1996 by GPS

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
155	47	SB		418744.9	6167374.3	1042	spruce	47	cut	no	
156	47	SB		418717.3	6167386.7	1041	balsam	40	cut	no	
157	47	SB		418703.6	6167313.9	1033	spruce	42	cut	no	
158	47	SB		418712.6	6167283.2	1033	spruce	45	cut	no	
159	47	SB		418681.0	6167286.3	1030	spruce	36	cut	no	
160	47	SB		418685.4	6167268.7	1029	spruce	52	cut	no	
161	47	SB		418774.2	6167410.4	1043	balsam	34	broken	no	
162	47	SB		418829.5	6167362.0	1043	spruce	37	cut	no	
163	47	SB		418840.4	6167307.5	1035	spruce	46	cut	no	
165	47	SB		418852.9	6167328.9	1045	balsam	29	cut	no	
166	47	SB		418885.7	6167258.3	1040	spruce	51	cut	1in5	
167	47	SB					spruce	55	broken	no	not found in 1996 by GPS
168	47	SB		418829.2	6167249.7	1040	spruce	42	cut	no	
169	47	SB		418871.3	6167297.8	1045	spruce	44	cut	no	
170	47	SB		418776.1	6167285.1	1031	balsam	45	cut	1in5	
171	47	SB		418866.3	6167251.6	1040	spruce	54	cut	no	
172	47	SB		418659.2	6167442.6	1045	spruce	64	cut	no	
173	47	SB		418661.2	6167488.5	1049	spruce	44	broken	no	
174	47	SB		418753.5	6167307.6	1035	balsam	45	cut	no	
175	47	SB		418766.6	6167342.2	1038	spruce	43	cut	no	
177	47	SB		418815.0	6167297.4	1037	spruce	40	cut	no	
178	47	SB		418801.8	6167340.2	1040	balsam	42	cut	no	
179	47	SB		418797.9	6167252.0	1037	pine	40	cut	no	
180	47	SB		418756.9	6167429.8	1045	spruce	54	cut	no	
181	47	SB		418687.7	6167428.7	1043	spruce	44	cut	no	
182	47	SB		418721.5	6167436.4	1045	spruce	53	cut	no	
183	47	SB		418679.1	6167500.9	1051	balsam	30	cut	no	
184	47	SB		418701.7	6167478.6	1048	spruce	38	cut	no	
185	47	SB		418791.8	6167308.7	1037	spruce	49	cut	no	
186	47	SB		418818.3	6167389.6	1045	spruce	46	cut	1in5	
187	47	SB		418680.3	6167463.1	1046	spruce	45	cut	no	
192	47	SB		418601.8	6167550.6	1051	balsam	50	cut	no	
193	47	TI		418582.4	6167659.2		pine	33	cut	no	
194	47	SB		418636.5	6167516.7	1052	spruce	44	cut	1in5	
196	47	SB		418597.1	6167511.8	1047	spruce	40	cut	no	
197	47	SB		418532.2	6167566.3	1054	pine	28	cut	no	
198	47	SB		418541.7	6167583.7	1055	pine	39	cut	no	
200	47	SB					pine	22	broken		not found in 1996
201	47	SB		418650.8	6167270.2	1027	spruce	40	cut	1in5	
202	47	SB		418692.3	6167244.7	1028	spruce	38	cut	1in5	
203	47	SB		418729.1	6167234.3	1030	spruce	37	cut	no	
204	47	SB		418764.3	6167237.2	1034	balsam	38	cut	no	
206	47	SB		418779.9	6167187.6	1030	spruce	34	cut	no	
207	47	SB		418816.8	6167181.9	1032	spruce	40	cut	no	
208	47	SB		418792.8	6167153.7	1029	balsam	42	cut	no	
209	47	SB		418733.4	6167185.0	1027	pine	37	cut	no	
211	47	SB		418702.5	6167202.0	1025	balsam	47	cut	no	
212	47	SB		418438.9	6167507.8	1033	spruce	53	cut	no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
213	47	SB		418531.6	6167541.8	1047	pine	36	cut	no	
214	47	SB		418536.8	6167483.1	1040	spruce	47	cut	no	
215	47	SB		418552.2	6167460.9	1042	balsam	57	cut	no	
216	47	SB		418562.7	6167436.8	1040	pine	46	cut	no	
217	47	SB		418583.4	6167440.3	1041	spruce	47	cut	no	
218	47	SB		418587.6	6167475.3	1042	balsam	46	cut	no	
219	47	SB		418624.1	6167458.3	1043	balsam	47	cut	1in5	
220	47	SB		418613.2	6167442.7	1040	balsam	54	cut	no	
221	47	SB		418597.3	6167388.2	1035	spruce	51	cut	1in5	
224	47	SB		418664.2	6167362.2	1040	spruce	50	cut	1in5	
225	47	SB		418655.0	6167322.6	1034	spruce	43	cut	no	
226	47	SB		418641.4	6167304.0	1033	spruce	55	cut	no	
227	47	SB		418613.0	6167316.6	1028	spruce	53	cut	no	
228	47	SB		418527.6	6167299.9	1024	spruce	35	cut	1in5	
229	47	SB		418477.4	6167365.1	1026	spruce	39	cut	no	
230	47	SB		418463.5	6167396.3	1027	spruce	35	cut	no	
231	47	SB		418452.7	6167359.3	1025	spruce	51	cut	1in5	
232	47	SB		418436.6	6167376.3	1026	spruce	35	cut	no	
233	47	SB		418431.6	6167408.0	1029	spruce	41	cut	no	
234	47	SB		418431.7	6167456.1	1030	spruce	42	cut	no	
235	47	SB		418413.7	6167432.7	1030	spruce	54	cut	no	
236	47	SB		418381.6	6167415.9	1029	balsam	30	cut	no	
237	47	SB		418374.3	6167451.8	1031	pine	38	cut	no	
238	47	SB		418406.3	6167469.7	1033	pine	38	cut	no	
239	47	SB		418428.4	6167487.4	1033	balsam	31	cut	1in5	
240	47	SB		418497.6	6167399.7	1028	balsam	39	broken	no	
301	47	SI		419245.9	6167564.8	1126	spruce	57	cut	1in5	
302	47	SI		419265.6	6167589.8	1133	balsam	41	cut	no	
303	47	SI		419257.1	6167594.2	1133	spruce	37	cut	no	same stem as NN164
304	47	SI	Isl 47-5	419291.7	6167614.3	1137	balsam	30	cut	no	
305	47	SI	Isl 47-5	419299.8	6167628.2	1140	spruce	43	cut	no	
306	47	SI	Isl 47-5	419309.3	6167620.4	1141	spruce	52	cut	1in5	
307	47	SI	Isl 47-5	419307.8	6167624.3	1141	spruce	40	cut	no	
308	47	SI	Isl 47-5	419310.2	6167625.6	1142	spruce	38	cut	no	
309	47	SI	Isl 47-5	419310.2	6167625.4	1142	balsam	15	cut	no	
310	47	SI	Isl 47-5	419310.7	6167624.3	1142	spruce	24	cut	no	
311	47	SI	Isl 47-5	419313.4	6167626.1	1143	balsam	28	cut	1in5	
312	47	SI	Isl 47-5	419316.1	6167630.8	1147	balsam	38	cut	no	
313	47	SI	Isl 47-5	419316.7	6167631.9	1147	balsam	17	cut	no	
314	47	SI	Isl 47-5	419317.3	6167631.0	1147	balsam	32	cut	no	
315	47	SI	Isl 47-5	419322.3	6167637.8	1149	spruce	42	cut	no	
316	47	SI	Isl 47-5	419323.4	6167637.8	1149	balsam	25	cut	no	
317	47	SI	Isl 47-5	419292.6	6167591.7	1132	balsam	32	cut	no	
318	47	SI	Isl 47-5	419296.2	6167584.8	1132	spruce	35	cut	no	
319	47	SI	Isl 47-5	419298.3	6167581.5	1132	spruce	47	cut	1in5	
320	47	SI	Isl 47-5	419302.1	6167578.7	1132	balsam	33	cut	no	
321	47	SI	Isl 47-5	419304.0	6167582.5	1133	balsam	28	cut	no	
322	47	SI	Isl 47-5	419310.5	6167578.1	1134	balsam	42	cut	no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
323	47	SI	Isl 47-5	419311.7	6167577.7	1134	spruce	39	cut	no	
324	47	SI	Isl 47-5	419313.4	6167570.9	1131	spruce	50	cut	1in5	47NP08
325	47	SI	Isl 47-5	419320.0	6167571.5	1133	balsam	28	cut	no	
326	47	SI	Isl 47-5	419321.3	6167570.9	1133	balsam	19	cut	no	
327	47	SI	Isl 47-5	419325.2	6167569.5	1134	balsam	40	cut	no	same stub as NN166
328	47	SI	Isl 47-5	419333.1	6167568.6	1140	spruce	44	cut	no	
329	47	SI	Isl 47-5	419333.8	6167569.3	1140	balsam	18	cut	no	
330	47	SI	Isl 47-5	419335.2	6167577.9	1137	balsam	22	cut	1in5	
331	47	SI	Isl 47-5	419334.8	6167578.3	1137	spruce	48	cut	no	
332	47	SI	Isl 47-5	419335.9	6167578.3	1137	spruce	35	cut	no	
333	47	SI	Isl 47-5	419336.8	6167582.7	1137	spruce	33	cut	no	
334	47	SI	Isl 47-5	419335.7	6167582.7	1137	spruce	35	cut	no	
335	47	SI	Isl 47-5	419335.9	6167583.5	1138	spruce	31	cut	no	
336	47	SI	Isl 47-5	419338.3	6167588.8	1144	balsam	24	cut	no	
337	47	SI	Isl 47-5	419341.6	6167592.5	1146	balsam	15	cut	1in5	
338	47	SI	Isl 47-5	419342.1	6167593.1	1146	balsam	16	cut	no	
339	47	SI	Isl 47-5	419346.4	6167590.2	1149	spruce	47	cut	no	
340	47	SI	Isl 47-5	419346.3	6167595.4	1149	spruce	30	cut	no	
341	47	SI	Isl 47-5	419347.5	6167595.0	1149	balsam	22	cut	1in5	
342	47	SI		419362.0	6167580.9	1142	spruce	49	cut	1in5	
343	47	SI		419362.7	6167580.5	1142	spruce	18	cut	no	
344	47	SI	Isl 47-5	419347.9	6167596.6	1146	spruce	23	cut	no	
345	47	SI	Isl 47-5	419350.7	6167597.8	1147	balsam	41	cut	no	
346	47	SI	Isl 47-5	419352.9	6167600.6	1146	balsam	28	cut	no	
347	47	SI	Isl 47-5	419356.6	6167606.7	1146	balsam	28	cut	no	
348	47	SI	Isl 47-5	419353.5	6167610.0	1145	balsam	18	cut	no	
349	47	SI	Isl 47-5	419354.0	6167610.4	1145	spruce	43	cut	no	
350	47	SI	Isl 47-5	419354.2	6167609.3	1145	balsam	21	cut	no	
351	47	SI	Isl 47-5	419361.3	6167609.7	1148	balsam	34	cut	1in5	
352	47	SI	Isl 47-5	419360.9	6167610.4	1148	balsam	17	cut	no	
353	47	SI	Isl 47-5	419353.1	6167617.3	1148	spruce	28	cut	1in5	
354	47	SI	Isl 47-5	419353.3	6167618.5	1148	spruce	37	cut	no	
355	47	SI	Isl 47-5	419352.9	6167618.4	1148	spruce	32	cut	no	
356	47	SI	Isl 47-5	419348.0	6167620.0	1148	balsam	21	cut	no	
357	47	SI	Isl 47-5	419349.5	6167622.4	1149	balsam	24	cut	no	
358	47	SI	Isl 47-5	419347.2	6167622.7	1150	balsam	22	cut	no	
359	47	SI	Isl 47-5	419348.3	6167628.1	1150	spruce	20	cut	1in5	
360	47	SI	Isl 47-5	419341.7	6167631.6	1150	spruce	56	cut	no	
361	47	SI	Isl 47-5	419341.0	6167633.0	1150	spruce	31	cut	no	
362	47	SI	Isl 47-5	419340.4	6167631.7	1150	balsam	17	cut	no	
363	47	SI	Isl 47-5	419335.3	6167638.7	1151	spruce	27	cut	no	
364	47	SI	Isl 47-5	419334.4	6167639.4	1151	balsam	35	cut	1in5	
365	47	SI	Isl 47-5	419330.3	6167640.4	1151	balsam	29	cut	no	
366	47	SI	Isl 47-5	419329.8	6167637.8	1150	spruce	33	cut	no	
367	47	SI	Isl 47-5	419329.4	6167636.5	1150	spruce	32	cut	no	
368	47	SI	Isl 47-5	419328.4	6167637.7	1150	spruce	25	cut	no	
369	47	SI		419343.1	6167661.2	1157	spruce	38	cut	no	
370	47	SI		419357.1	6167644.2	1154	pine	33	cut	no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
372	47	SI		419363.0	6167649.4	1157	spruce	30	cut	no	
373	47	SI		419368.1	6167625.5	1152	balsam	28	cut	no	
374	47	SI		419377.0	6167655.8	1153	spruce	26	cut	no	
375	47	SI		419379.6	6167673.6	1165	spruce	60	cut	1in5	
376	47	SI					spruce	18	broken		not found in 1996
377	47	SI		419405.3	6167663.6	1168	balsam	44	cut	no	
378	47	SI		419420.0	6167658.6	1169	spruce	57	cut	no	
379	47	SI		419393.9	6167608.6	1151	balsam	52	cut	no	
380	47	SI		419393.9	6167580.1	1150	spruce	33	cut	no	
381	47	SI		419421.2	6167579.8	1153	spruce	49	cut	no	
382	47	SI		419415.1	6167591.5	1153	balsam	29	cut	1in5	
383	47	SI		419419.3	6167603.9	1155	balsam	36	cut	no	
384	47	SI		419461.4	6167583.1	1166	balsam	36	cut	no	
385	47	SI		419471.2	6167552.7	1161	pine	26	cut	1in5	
386	47	SI		419467.7	6167533.6	1157	balsam	17	cut	no	
387	47	SI		419492.3	6167568.8	1172	pine	31	cut	no	
388	47	SI		419482.2	6167590.2	1173	pine	30	cut	no	
389	47	SI		419477.7	6167619.2	1170	spruce	42	cut	no	
390	47	SI		419526.4	6167634.2	1194	balsam	30	cut	1in5	
391	47	SI		419540.2	6167571.6	1183	pine	29	broken	no	
392	47	SI		419517.1	6167581.3	1178	balsam	34	cut	1in5	cavity
393	47	SI		419499.2	6167537.7	1170	balsam	28	cut	no	
394	47	SI		419500.4	6167513.7	1165	pine	44	cut	no	
395	47	SI		419510.3	6167481.3	1161	pine	41	broken	1in5	
396	47	SI		419516.8	6167478.5	1162	balsam	35	cut	no	
397	47	SI		419400.6	6167528.8	1136	spruce	54	cut	no	
398	47	SI		419360.4	6167474.0	1123	spruce	48	cut	no	
399	47	SI		419152.5	6167529.2	1116	spruce	64	broken	no	
400	47	SI		419164.7	6167486.5	1112	pine	36	cut	no	
401	47	SI		419209.5	6167456.9	1112	spruce	53	cut	no	
402	47	SI		419252.0	6167428.3	1116	balsam	45	cut	no	
403	47	SI		419281.3	6167442.2	1117	pine	50	cut	no	
404	47	SI		419296.7	6167410.3	1120	balsam	42	cut	no	
405	47	SI		419281.1	6167383.7	1114	pine	43	cut	no	
406	47	SI		419320.1	6167388.0	1118	spruce	59	cut	1in5	
407	47	SI		419329.2	6167393.6	1120	spruce	44	cut	no	
409	47	SI		419363.6	6167371.5	1122	spruce	41	cut	1in5	
410	47	SI		419358.1	6167367.2	1122	spruce	46	broken	no	
413	47	SI	Isl 47-7	419349.8	6167322.5	1115	spruce	51	cut	1in5	
414	47	SI	Isl 47-7	419347.4	6167328.8	1114	balsam	26	cut	no	
416	47	SI	Isl 47-7	419364.5	6167344.3	1123	balsam	45	cut	no	
417	47	SI	Isl 47-7	419360.8	6167343.0	1115	balsam	40	cut	1in5	
418	47	SI	Isl 47-7	419363.2	6167340.7	1119	spruce	39	cut	no	
419	47	SI	Isl 47-7	419365.2	6167333.4	1116	balsam	57	cut	no	
420	47	SI	Isl 47-7	419370.2	6167333.6	1116	spruce	37	cut	no	
421	47	SI	Isl 47-7	419375.2	6167337.0	1119	spruce	31	cut	1in5	
422	47	SI	Isl 47-7	419380.2	6167332.6	1121	balsam	22	cut	no	
423	47	SI	Isl 47-7	419381.4	6167331.2	1121	balsam	25	cut	no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
424	47	SI	Isl 47-7	419384.9	6167328.1	1118	spruce	21	cut	no	
425	47	SI		419404.4	6167360.3	1117	spruce	60	cut	no	
426	47	SI		419413.7	6167382.9	1118	spruce	45	cut	no	
427	47	SI		419391.5	6167395.4	1121	spruce	44	cut	1in5	
428	47	SI		419416.5	6167400.4	1126	spruce	42	cut	no	
429	47	SI		419420.1	6167415.5	1129	pine	47	cut	no	
430	47	SI		419449.5	6167369.1	1126	pine	38	cut	no	
431	47	SI		419475.3	6167372.5	1120	spruce	65	cut	no	
432	47	SI		419457.1	6167357.6	1121	spruce	39	cut	no	
433	47	SI					balsam	46	broken		not found in 1996
434	47	SI		419452.3	6167349.3	1122	balsam	47	cut	no	
435	47	SI		419430.8	6167357.4	1118	spruce	39	cut	1in5	
436	47	SI		419405.5	6167314.2	1121	spruce	27	cut	no	
437	47	SI		419404.1	6167315.6	1121	spruce	25	cut	1in5	
438	47	SI		419403.6	6167320.9	1119	balsam	24	cut	no	
439	47	SI		419401.7	6167320.5	1119	spruce	33	cut	no	
440	47	SI		419399.1	6167320.8	1113	spruce	31	cut	no	
441	47	SI		419395.2	6167320.8	1104	balsam	23	cut	no	
442	47	SI		419399.5	6167316.3	1115	balsam	33	cut	no	
443	47	SI		419398.8	6167312.7	1112	spruce	33	cut	1in5	
444	47	SI		419398.6	6167314.1	1112	balsam	27	cut	no	
445	47	SI	Isl 47-7	419391.5	6167324.6	1115	spruce	39	cut	no	
446	47	SI	Isl 47-7	419390.7	6167325.2	1115	balsam	17	cut	1in5	
447	47	SI	Isl 47-7	419394.1	6167302.3	1114	balsam	36	cut	no	
448	47	SI	Isl 47-7	419392.7	6167301.6	1114	spruce	57	cut	no	
449	47	SI	Isl 47-7	419389.3	6167298.3	1116	balsam	20	cut	1in5	
450	47	SI	Isl 47-7	419387.7	6167297.5	1116	balsam	24	cut	no	
451	47	SI	Isl 47-7	419388.4	6167296.1	1118	spruce	36	cut	no	
452	47	SI	Isl 47-7	419390.2	6167296.6	1118	spruce	33	cut	no	
453	47	SI	Isl 47-7	419388.1	6167293.2	1110	spruce	31	cut	no	
454	47	SI	Isl 47-7	419384.4	6167285.8	1107	balsam	53	cut	no	
455	47	SI		419418.9	6167278.8	1110	pine	37		no	
456	47	SI		419432.0	6167282.4	1111	spruce	61	cut	no	
457	47	SI		419431.7	6167247.9	1111	balsam	45	cut	no	
458	47	SI		419411.2	6167241.2	1109	balsam	52	cut	1in5	
459	47	SI		419403.2	6167254.9	1123	balsam	53	cut	no	
460	47	SI		419392.6	6167265.0	1108	balsam	51	cut	no	
461	47	SI		419397.3	6167267.5	1107	pine	28	cut	no	
462	47	SI	Isl 47-7	419375.5	6167275.0	1105	balsam	25	cut	1in5	
463	47	SI	Isl 47-7	419364.7	6167283.6	1105	balsam	27	cut	no	
464	47	SI	Isl 47-7	419363.0	6167284.1	1105	balsam	21	cut	no	
465	47	SI	Isl 47-7	419359.5	6167292.3	1108	balsam	40	cut	no	
466	47	SI	Isl 47-7	419358.6	6167287.5	1107	balsam	47	cut	1in5	
467	47	SI		419356.0	6167273.8	1107	balsam	57	cut	no	
468	47	SI		419337.9	6167285.3	1107	balsam	38	cut	no	
469	47	SI	Isl 47-7	419353.8	6167292.3	1108	spruce	46	cut	no	
470	47	SI	Isl 47-7	419349.8	6167296.0	1108	balsam	43	cut	no	
471	47	SI	Isl 47-7	419348.0	6167297.8	1107	spruce	27	cut	no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
472	47	SI	Isl 47-7	419342.0	6167303.6	1107	balsam	41	cut	1in5	
473	47	SI		419331.9	6167305.5	1107	balsam	56	cut	no	
474	47	SI	Isl 47-7	419342.1	6167316.5	1110	spruce	37	cut	no	
475	47	SI	Isl 47-7	419344.9	6167316.3	1110	spruce	42	cut	no	
476	47	SI		419289.7	6167322.8	1106	balsam	60	cut	1in5	
477	47	SI		419264.8	6167318.2	1103	balsam	51	cut	no	
478	47	SI		419260.7	6167364.8	1109	spruce	66	cut	no	
480	47	SI		419206.9	6167394.4	1105	spruce	43	cut	no	
481	47	SI		419201.9	6167398.2	1104	balsam	33	broken	no	
482	47	SI	Isl 47-6	419186.0	6167438.2	1108	spruce	40	cut	no	
483	47	SI	Isl 47-6	419185.8	6167437.1	1108	balsam	38	cut	no	
484	47	SI	Isl 47-6	419182.5	6167434.5	1107	balsam	26	cut	1in5	
485	47	SI	Isl 47-6	419181.1	6167435.3	1107	spruce	24	cut	no	
486	47	SI	Isl 47-6	419179.6	6167434.7	1107	balsam	24	cut	no	
487	47	SI	Isl 47-6	419180.9	6167434.2	1107	spruce	39	cut	no	
488	47	SI	Isl 47-6	419181.5	6167430.2	1107	spruce	27	cut	no	
489	47	SI	Isl 47-6	419176.9	6167428.3	1107	spruce	30	cut	1in5	
490	47	SI	Isl 47-6	419175.5	6167422.9	1107	spruce	38	cut	no	
491	47	SI	Isl 47-6	419176.1	6167421.7	1107	balsam	29	cut	no	
492	47	SI	Isl 47-6	419174.6	6167421.9	1107	spruce	31	cut	1in5	
493	47	SI	Isl 47-6	419163.1	6167416.4	1102	balsam	29	cut	no	
494	47	SI	Isl 47-6	419163.5	6167415.7	1102	balsam	22	cut	no	
495	47	SI	Isl 47-6	419160.4	6167412.2	1100	spruce	35	cut	1in5	
496	47	SI	Isl 47-6	419141.9	6167413.3	1098	balsam	18	cut	no	
497	47	SI	Isl 47-6	419142.0	6167412.9	1098	spruce	59	cut	no	
498	47	SI	Isl 47-6	419131.3	6167423.3	1099	spruce	31	cut	no	
499	47	SI	Isl 47-6	419127.0	6167427.2	1099	spruce	51	cut	1in5	
500	47	SI	Isl 47-6	419118.9	6167439.1	1098	spruce	29	cut	no	
501	47	SI	Isl 47-6	419120.7	6167440.7	1098	spruce	25	cut	no	
502	47	SI		419105.8	6167443.2	1098	balsam	31	cut	no	
503	47	SI		419107.4	6167443.1	1098	pine	19	cut	no	
504	47	SI	Isl 47-6	419123.9	6167444.3	1102	balsam	17	cut	1in5	
505	47	SI	Isl 47-6	419125.4	6167444.0	1102	spruce	50	cut	no	
506	47	SI	Isl 47-6	419128.9	6167446.8	1102	spruce	41	cut	no	
507	47	SI	Isl 47-6	419128.3	6167448.4	1102	balsam	52	cut	no	
508	47	SI	Isl 47-6	419129.7	6167448.3	1102	spruce	41	cut	no	
509	47	SI	Isl 47-6	419132.0	6167449.7	1105	spruce	29	cut	1in5	
510	47	SI	Isl 47-6	419133.8	6167449.6	1105	spruce	43	cut	no	
511	47	SI	Isl 47-6	419134.4	6167451.8	1105	spruce	66	cut	1in5	
512	47	SI	Isl 47-6	419144.9	6167467.3	1109	spruce	58	cut	no	
513	47	SI	Isl 47-6	419146.3	6167468.0	1109	spruce	20	cut	no	
514	47	SI	Isl 47-6	419157.5	6167460.8	1109	balsam	35	cut	no	
515	47	SI	Isl 47-6	419165.5	6167460.0	1110	balsam	25	cut	no	
516	47	SI	Isl 47-6	419173.8	6167455.3	1108	spruce	38	cut	no	same stub as NN319
517	47	SI	Isl 47-6				spruce	36	cut		not found in 1996
518	47	SI	Isl 47-6	419178.5	6167452.5	1111	balsam	19	cut	1in5	
519	47	SI	Isl 47-6	419185.5	6167449.5	1111	balsam	29	cut	no	
704	47	SI		418946.4	6167262.8	1045	balsam	27	cut	1in5	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
705	47	SI		418955.0	6167279.0	1049	spruce	37	cut	no	
706	47	SI		418913.3	6167373.1	1057	balsam	25	cut	no	
707	47	SI		418933.5	6167323.2	1052	balsam	25	cut	no	
708	47	SI		418971.4	6167356.6	1058	spruce	50	cut	no	
709	47	SI		419018.6	6167372.7	1066	spruce	25	cut	no	
710	47	SI		419029.6	6167397.4	1072	balsam	22	cut	no	
711	47	SI		419012.0	6167413.9	1072	balsam	51	cut	no	
713	47	SI		419099.2	6167355.2	1074	spruce	35	cut	no	
714	47	SI		419067.7	6167376.7	1072	balsam	41	cut	no	
715	47	SI		419056.3	6167371.2	1068	spruce	34	cut	no	
716	47	SI		419051.2	6167347.8	1065	spruce	49	cut	1in5	
717	47	SI		419072.4	6167345.6	1067	balsam	39	cut	no	
718	47	SI		419070.6	6167320.0	1069	balsam	35	cut	no	
720	47	SI		419097.6	6167327.2	1071	spruce	28	cut	no	
721	47	SI		419089.8	6167295.9	1068	balsam	36	cut	1in5	
723	47	SI		419115.9	6167302.1	1072	balsam	27	cut	no	
724	47	SI		419120.0	6167304.1	1072	spruce	46	cut	no	
725	47	SI		419143.6	6167324.5	1076	spruce	35	cut	no	
730	47	SI		419138.7	6167294.0	1073	spruce	39	cut	no	
731	47	SI		419161.3	6167293.8	1078	balsam	54	cut	no	
733	47	SI		419193.0	6167294.3	1085	balsam	71	cut	no	
734	47	SI		419169.3	6167275.3	1076	balsam	48	cut	1in5	
735	47	SI		419156.3	6167271.8	1075	balsam	43	cut	no	
737	47	SI		419169.8	6167244.1	1071	spruce	55	cut	no	
738	47	SI		419185.6	6167262.8	1078	balsam	51	cut	no	
739	47	SI		419211.2	6167267.5	1083	spruce	68	cut	no	
740	47	SI		419229.4	6167255.2	1088	spruce	37	cut	no	
741	47	SI		419203.3	6167244.1	1078	spruce	51	cut	no	
743	47	SI		419202.7	6167201.2	1075	spruce	60	cut	1in5	
745	47	SI		419225.7	6167189.0	1076	spruce	42	cut	no	
746	47	SI		419225.5	6167179.6	1073	balsam	34	cut	no	
747	47	SI		419222.8	6167222.2	1078	spruce	60	cut	no	
748	47	SI		419231.4	6167218.2	1079	spruce	41	cut	no	
749	47	SI		419261.1	6167222.6	1084	balsam	39	cut	1in5	
750	47	SI					balsam	40	cut	no	not found in 1996 by GPS
752	47	SI		419306.1	6167223.0	1095	spruce	33	cut	no	
753	47	SI		419340.5	6167213.6	1096	balsam	38	cut	no	
754	47	SI		419341.4	6167215.5	1096	balsam	21	cut	no	
755	47	SI		419374.8	6167197.8	1100	spruce	46	cut	no	
756	47	SI		419338.8	6167185.0	1097	spruce	37	cut	1in5	
757	47	SI		419282.1	6167205.6	1086	spruce	46	cut	no	
758	47	SI		419267.9	6167180.1	1081	spruce	38	cut	no	
759	47	SI		419255.1	6167195.8	1082	spruce	39	cut	no	
760	47	SI		419243.2	6167162.6	1071	spruce	46	cut	no	
761	47	SI		419236.3	6167163.0	1072	spruce	54	cut	1in5	
762	47	SI		419211.7	6167139.8	1065	spruce	45	cut	no	
763	47	SI		419193.6	6167137.1	1062	spruce	41	cut	1in5	
764	47	SI		419181.4	6167144.6	1064	spruce	43	cut	no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
765	47	SI		419201.9	6167157.1	1066	spruce	32	cut	no	
766	47	SI		419193.8	6167179.0	1071	balsam	47	cut	no	
767	47	SI		419177.2	6167214.1	1070	balsam	40	cut	1in5	
768	47	SI		419166.5	6167203.7	1066	spruce	59	cut	no	
769	47	SI		419154.1	6167201.0	1065	balsam	48	cut	no	
770	47	SI		419144.8	6167208.5	1065	spruce	41	cut	no	
771	47	SI		419151.6	6167180.0	1062	spruce	41	cut	no	
772	47	SI		419165.3	6167166.4	1065	spruce	43	cut	no	
773	47	SI		419142.4	6167150.3	1058	spruce	47	cut	no	
774	47	SI		419128.4	6167173.9	1056	balsam	40	cut	no	
775	47	SI		419125.0	6167189.6	1058	spruce	62	cut	1in5	
776	47	SI		419097.3	6167197.9	1055	spruce	47	cut	no	same stub as NN321
777	47	SI		419077.1	6167224.7	1057	balsam	26	cut	no	
778	47	SI		419063.4	6167214.0	1054	spruce	40	cut	no	
779	47	SI		419049.2	6167221.8	1054	balsam	50	broken	no	
780	47	SI		419040.0	6167242.6	1052	balsam	0	cut	no	
781	47	SI		419029.2	6167267.7	1052	pine	51	cut	no	
782	47	SI		419046.5	6167290.2	1058	balsam	31	cut	1in5	
783	47	SI		419040.3	6167308.3	1060	spruce	59	broken	no	
784	47	SI		419026.1	6167317.8	1059	balsam	47	cut	no	
785	47	SI		419001.5	6167328.2	1058	spruce	42	cut	no	
787	47	SI					balsam	36	cut	no	not found in 1996 by GPS
789	47	SI		419000.2	6167300.5	1056	balsam	34	cut	no	
790	47	SI		418999.8	6167265.3	1048	spruce	42	cut	no	
791	47	SI	Isl 47-8	419080.2	6167246.4	1059	balsam	34	cut	1in5	
792	47	SI	Isl 47-8	419076.8	6167248.5	1059	spruce	17	cut	no	
793	47	SI	Isl 47-8	419073.1	6167252.9	1060	spruce	31	cut	no	
794	47	SI	Isl 47-8	419081.5	6167256.4	1061	spruce	37	cut	no	
795	47	SI	Isl 47-8	419087.6	6167259.4	1060	balsam	31	cut	1in5	
796	47	SI	Isl 47-8	419091.9	6167264.7	1061	balsam	27	cut	no	
797	47	SI		419078.5	6167270.4	1060	spruce	36	cut	no	
798	47	SI	Isl 47-8	419102.3	6167267.2	1066	balsam	56	cut	no	
799	47	SI	Isl 47-8	419103.4	6167266.1	1066	spruce	43	cut	1in5	
800	47	SI	Isl 47-8	419097.6	6167263.9	1062	spruce	33	cut	no	
801	47	SI	Isl 47-8	419115.2	6167280.0	1069	spruce	30	cut	no	
802	47	SI	Isl 47-8	419119.1	6167278.5	1070	spruce	46	cut	1in5	
803	47	SI	Isl 47-8	419126.1	6167270.2	1069	spruce	32	cut	no	
804	47	SI	Isl 47-8	419127.8	6167270.2	1069	balsam	36	cut	no	
805	47	SI	Isl 47-8	419127.3	6167268.7	1069	spruce	38	cut	1in5	
806	47	SI	Isl 47-8	419139.4	6167258.4	1071	spruce	56	cut	no	
807	47	SI	Isl 47-8	419142.5	6167256.0	1070	spruce	22	cut	no	
808	47	SI	Isl 47-8	419141.1	6167255.3	1070	spruce	34	cut	no	
809	47	SI	Isl 47-8	419137.7	6167254.0	1070	balsam	27	cut	no	
810	47	SI	Isl 47-8	419144.1	6167252.0	1070	balsam	42	cut	no	
811	47	SI	Isl 47-8	419139.5	6167245.9	1070	balsam	46	cut	no	
812	47	SI	Isl 47-8	419137.9	6167245.8	1070	spruce	43	cut	no	
813	47	SI	Isl 47-8	419133.4	6167239.1	1069	balsam	59	cut	1in5	
814	47	SI	Isl 47-8	419139.9	6167239.7	1067	balsam	30	cut	no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
815	47	SI	Isl 47-8	419128.5	6167238.6	1067	spruce	60	cut	no	
816	47	SI	Isl 47-8	419124.3	6167233.0	1063	spruce	52	cut	no	
817	47	SI	Isl 47-8	419118.8	6167227.3	1062	balsam	74	cut	no	
818	47	SI	Isl 47-8	419116.1	6167223.8	1062	balsam	30	cut	1in5	
819	47	SI	Isl 47-8	419111.1	6167222.1	1060	spruce	40	cut	no	
820	47	SI	Isl 47-8	419110.0	6167220.6	1060	balsam	36	cut	no	
821	47	SI	Isl 47-8	419103.4	6167227.3	1061	spruce	39	cut	no	
822	47	SI	Isl 47-8	419102.6	6167226.0	1061	balsam	22	cut	1in5	
823	47	SI	Isl 47-8	419101.5	6167227.4	1061	spruce	41	cut	no	
824	47	SI	Isl 47-8	419096.2	6167227.3	1060	spruce	33	cut	no	
825	47	SI	Isl 47-8	419089.5	6167234.9	1059	spruce	26	cut	1in5	
826	47	SI	Isl 47-8	419087.1	6167240.6	1059	spruce	27	cut	no	
827	47	SI	Isl 47-8	419085.5	6167240.5	1059	spruce	28	cut	no	
828	47	SI	Isl 47-8	419084.7	6167245.6	1061	spruce	40	cut	no	
829	47	SI	Isl 47-8	419085.9	6167244.2	1061	spruce	38	cut	no	
1000	46	SB		420400.9	6165695.2	1018	pine	31		no	
1001	46	SB		420380.4	6165726.6	1018	spruce	36		no	
1002	46	SB		420376.8	6165776.9	1022	pine	35		no	
1003	46	SB		420354.7	6165801.7	1023	balsam	21		no	
1004	46	SB		420320.8	6165802.6	1019	spruce	25		1in5	
1005	46	SB		420341.1	6165822.7	1023	pine	23		no	
1006	46	SB		420331.4	6165850.5	1020	pine	21		no	
1007	46	SB		420294.6	6165839.8	1019	balsam	35		no	
1008	46	SB		420265.2	6165811.6	1013	balsam	32		no	
1009	46	SB		420237.6	6165846.0	1013	balsam	32		1in5	
1010	46	SB		420260.1	6165865.8	1017	pine	31		no	
1011	46	SB		420295.0	6165885.2	1022	pine	27		no	
1012	46	SB		420274.0	6165924.8	1026	spruce	24		no	
1013	46	SB		420251.9	6165899.6	1019	pine	30		no	
1014	46	SB		420234.0	6165893.4	1016	balsam	26		1in5	
1015	46	SB		420205.9	6165883.7	1012	balsam	27		no	
1016	46	SB		420204.3	6165918.3	1012	pine	33		no	
1017	46	SB		420222.5	6165918.4	1016	pine	28		no	
1018	46	SB		420236.6	6165936.3	1022	pine	32		no	
1019	46	SB		420251.4	6165961.2	1026	pine	22		1in5	
1020	46	SB		420235.2	6165990.7	1026	pine	26		no	
1021	46	SB		420212.1	6165983.0	1022	pine	34		no	
1022	46	SB		420195.8	6165957.6	1019	balsam	25		no	
1023	46	SB		420172.4	6165932.4	1015	pine	28		no	
1024	46	SB		420179.3	6165916.0	1009	balsam	26		1in5	
1025	46	SB		420169.8	6165906.5	1007	pine	24		no	
1026	46	SB		420142.6	6165937.6	1012	pine	31		no	
1027	46	SB		420175.8	6165976.3	1017	pine	22		no	
1028	46	SB		420191.6	6166002.9	1023	pine	22		no	
1029	46	SB		420215.4	6166025.6	1034	balsam	27		1in5	
1030	46	SB		420199.3	6166056.7	1033	balsam	29		no	
1031	46	SB		420173.2	6166039.6	1027	pine	26		no	
1032	46	SB		420158.7	6165999.2	1019	pine	24		no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
1033	46	SB		420123.4	6165974.2	1014	pine	24		no	
1034	46	SB		420124.3	6165950.0	1012	pine	28		1in5	
1035	46	SB		420107.2	6165978.2	1013	pine	24		no	
1036	46	SB		420102.9	6165977.9	1013	pine	26		no	
1037	46	SB		420080.3	6166001.9	1013	pine	17		no	
1038	46	SB		420105.4	6166008.2	1015	pine	21		no	
1039	46	SB		420143.1	6166029.5	1021		26		1in5	
1040	46	SB		420178.5	6166091.0	1031	pine	22		no	
1041	46	SB		420152.8	6166076.1	1026	pine	20		no	
1042	46	SB		420126.5	6166059.4	1022	balsam	22		no	
1043	46	SB		420092.1	6166031.5	1016	spruce	28		no	
1044	46	SB		420053.9	6166035.7	1013	pine	22		1in5	
1045	46	SB		420045.7	6166048.6	1014	pine	26		no	
1046	46	SB		420073.9	6166059.5	1016	pine	20		no	
1047	46	SB		420074.4	6166059.2	1016	pine	14		no	
1048	46	SB		420096.3	6166085.8	1023	pine	23		no	
1049	46	SB		420100.5	6166084.8	1023	pine	19		1in5	
1050	46	SB		420132.8	6166100.0	1024	spruce	43		no	
1051	46	SB		420152.4	6166124.4	1031	spruce	38		no	
1052	46	SB		420110.5	6166180.0	1033	spruce	40	broken	no	
1053	46	SB		420087.9	6166170.0	1026	balsam	44		no	
1054	46	SB		420104.1	6166122.1	1024	balsam	30		1in5	
1055	46	SB		420089.4	6166133.6	1023	pine	27		no	
1056	46	SB		420079.3	6166122.3	1021	balsam	34		no	
1057	46	SB		420052.4	6166162.5	1024	pine	37		no	
1058	46	SB		420056.2	6166110.4	1018	balsam	33		no	
1059	46	SB		420045.0	6166087.6	1016	balsam	37		1in5	
1060	46	SB		420027.3	6166083.9	1016	balsam	31		no	
1061	46	SI		419985.8	6166098.5	1013	spruce	47		no	
1062	46	SI		420003.0	6166107.1	1015	balsam	39		no	
1063	46	SB		420035.7	6166115.9	1017	spruce	34		no	
1064	46	SB		420057.8	6166132.8	1021	balsam	43		1in5	
1065	46	SB		420092.8	6166200.2	1033	balsam	44		no	
1066	46	SI		420065.6	6166220.1	1029	balsam	66		no	
1067	46	SI		420042.7	6166211.3	1029	balsam	33		no	
1068	46	SI		420038.4	6166162.7	1022	balsam	39	broken	yes	46NP02
1069	46	SI		420009.8	6166141.1	1018	balsam	36		1in5	
1070	46	SI		420001.8	6166124.0	1016	spruce	32		no	
1071	46	SI		419966.1	6166139.5	1013	balsam	39		no	
1072	46	SI		419949.4	6166148.6	1015	spruce	43		no	
1073	46	SI		419977.1	6166153.8	1016	balsam	46		no	
1074	46	SI		419983.1	6166166.7	1017		38		1in5	
1075	46	SI		419999.2	6166184.7	1019	spruce	37		no	
1076	46	SI		420017.4	6166194.2	1023	balsam	36		no	
1077	46	SI		420023.7	6166228.2	1027	spruce	49		no	
1078	46	SI		420006.7	6166209.1	1025	spruce	36		no	
1079	46	SI		419990.7	6166211.5	1021	pine	29		1in5	
1080	46	SI		419972.4	6166193.0	1018	spruce	51		no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
1081	46	SI		419938.0	6166171.6	1015	spruce	38		no	
1082	46	SI		419918.2	6166186.7	1014	spruce	44		no	
1083	46	SI		419947.5	6166204.6	1018	pine	32		no	
1084	46	SI		419989.5	6166247.1	1024	spruce	44		1in5	
1085	46	SI		420005.4	6166240.5	1025	balsam	38		no	
1086	46	SI		420009.5	6166262.1	1030	balsam	29		no	
1087	46	SI		420006.1	6166286.3	1031	pine	33		no	
1088	46	SI		419995.0	6166270.9	1030	balsam	38		no	
1089	46	SI		419966.2	6166316.6	1029	spruce	34		1in5	
1090	46	SI		419935.8	6166321.2	1030	spruce	44		no	
1091	46	SI		419951.3	6166276.6	1026	balsam	41		no	
1092	46	SI		419932.3	6166282.8	1027	spruce	51		no	
1093	46	SI		419920.3	6166265.3	1021	balsam	59		no	
1094	46	SI	Isl 46-1	419905.8	6166287.3	1021	spruce	51		1in5	
1095	46	SI	Isl 46-1	419904.8	6166269.4	1020	balsam	40		no	
1096	46	SI	Isl 46-1	419905.6	6166262.8	1023	balsam	34		no	
1097	46	SI	Isl 46-1	419898.9	6166263.6	1016	balsam	25		no	
1098	46	SI	Isl 46-1	419846.8	6166258.6	1015	balsam	36		no	
1099	46	SI	Isl 46-1	419899.0	6166257.1	1015	pine	21		1in5	
1100	46	SI	Isl 46-1	419896.4	6166251.1	1016	spruce	52		no	
1101	46	SI	Isl 46-1	419895.7	6166249.1	1016	balsam	19		no	
1102	46	SI	Isl 46-1	419897.8	6166244.7	1016	pine	51		no	
1103	46	SI	Isl 46-1	419900.3	6166237.9	1018	balsam	14		no	
1104	46	SI	Isl 46-1	419900.2	6166235.2	1017	pine	20		1in5	
1105	46	SI		419908.8	6166237.8	1016	spruce	28		no	
1106	46	SI	Isl 46-1	419898.5	6166233.5	1017	spruce	17		no	
1107	46	SI	Isl 46-1	419895.0	6166236.0	1015	spruce	48		no	
1108	46	SI	Isl 46-1	419894.8	6166234.2	1015	balsam	27		no	
1109	46	SI	Isl 46-1	419893.5	6166228.5	1015	balsam	17		1in5	
1110	46	SI	Isl 46-1	419891.8	6166226.9	1015	spruce	47		no	
1111	46	SI	Isl 46-1	419886.7	6166226.1	1014	spruce	44		no	
1112	46	SI	Isl 46-1	419884.4	6166225.8	1014	spruce	53		no	
1113	46	SI		419930.6	6166223.0	1018	spruce	30		no	
1114	46	SI		419914.5	6166208.2	1016	balsam	32		1in5	
1115	46	SI	Isl 46-1	419869.4	6166231.8	1013	spruce	42		no	
1116	46	SI	Isl 46-1	419870.7	6166234.1	1013	spruce	22		no	
1117	46	SI	Isl 46-1	419866.7	6166227.2	1012	spruce	38		no	
1118	46	SI	Isl 46-1	419866.4	6166240.4	1013	spruce	44		no	
1119	46	SI	Isl 46-1	419861.8	6166243.3	1013	balsam	17		1in5	
1120	46	SI	Isl 46-1	419860.2	6166244.8	1013	pine	30		no	
1121	46	SI	Isl 46-1	419858.8	6166249.4	1014	spruce	20		no	
1122	46	SI	Isl 46-1	419856.4	6166254.8	1014	spruce	27		no	
1123	46	SI	Isl 46-1	419858.1	6166256.3	1014	balsam	28		no	
1124	46	SI	Isl 46-1	419861.7	6166257.2	1015	spruce	32		1in5	
1125	46	SI	Isl 46-1	419864.2	6166263.7	1015	balsam	45		no	
1126	46	SI	Isl 46-1	419872.6	6166280.9	1017	spruce	31		no	
1127	46	SI	Isl 46-1	419870.2	6166281.2	1017	spruce	34		no	
1128	46	SI	Isl 46-1	419873.8	6166287.4	1019	balsam	29		no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
1129	46	SI	Isl 46-1	419881.8	6166293.4	1020	spruce	50		1in5	
1130	46	SI	Isl 46-1	419887.4	6166299.9	1020	pine	34		no	
1131	46	SI	Isl 46-1	419891.3	6166299.2	1020	spruce	32		no	
1132	46	SI	Isl 46-1	419898.7	6166294.4	1020	spruce	31		no	
1133	46	SI	Isl 46-1	419897.9	6166292.8	1020	balsam	35		no	
1134	46	SI		419892.1	6166306.4	1021	balsam	22		1in5	
1135	46	SI		419895.3	6166306.8	1021	spruce	48		no	
1136	46	SI	Isl 46-1	419902.6	6166291.9	1020	spruce	47		no	
1137	46	SI	Isl 46-1	419901.4	6166289.7	1020	spruce	20		no	
1138	46	SI		419922.0	6166319.5	1026	spruce	44		no	
1139	46	SI		419902.2	6166370.9	1030	pine	50		1in5	
1140	46	SI		419871.5	6166375.7	1030	balsam	55		no	
1141	46	SI		419879.1	6166360.0	1028	spruce	34		no	
1142	46	SI		419896.1	6166339.8	1029	balsam	32		no	
1143	46	SI		419879.2	6166318.0	1022	balsam	35		no	
1144	46	SI		419867.5	6166335.0	1023	spruce	38		1in5	
1145	46	SI		419860.0	6166333.6	1024	spruce	25		no	
1146	46	SI		419849.2	6166346.5	1025	pine	36		no	
1147	46	SI		419829.6	6166309.0	1021	spruce	29		no	
1148	46	SI		419828.2	6166286.8	1019	pine	22		no	
1149	46	SI		419811.9	6166303.0	1020	spruce	43		1in5	
1150	46	SI		419814.9	6166320.4	1019	spruce	44		no	
1151	46	SI		419774.5	6166315.5	1016	balsam	33		no	
1152	46	SI		419759.6	6166331.4	1018	balsam	45		no	
1153	46	SI		419767.8	6166356.7	1020	balsam	34		no	
1154	46	SI		419775.2	6166339.7	1020	pine	28		1in5	
1155	46	SI		419784.3	6166326.5	1019	balsam	34		no	
1156	46	SI		419814.0	6166346.9	1022	balsam	44		no	
1157	46	SI		419807.8	6166358.7	1026	balsam	30		no	
1158	46	SI		419820.8	6166355.5	1024	balsam	34		no	
1159	46	SI		419820.7	6166382.3	1035	pine	42		1in5	
1160	46	SI		419844.0	6166393.9	1032	balsam	30		no	
1161	46	SI		419842.3	6166409.8	1034	spruce	40		no	
1162	46	SI		419819.1	6166420.3	1031	balsam	33		no	
1163	46	SI		419787.8	6166445.3	1031	balsam	39		no	
1164	46	SI		419809.5	6166406.9	1032	pine	22		1in5	
1165	46	SI		419811.4	6166409.2	1032	spruce	23		no	
1166	46	SI		419790.5	6166403.8	1030	pine	31		no	
1167	46	SI		419778.3	6166374.9	1025	balsam	26		no	
1168	46	SI		419739.1	6166379.8	1024	balsam	30		no	
1169	46	SI		419754.0	6166401.8	1026	balsam	41		1in5	
1170	46	SI	Isl 46-2	419729.7	6166460.1	1022	spruce	63		no	
1171	46	SI	Isl 46-2	419729.0	6166457.8	1022	balsam	29		no	
1172	46	SI	Isl 46-2	419732.1	6166453.9	1022	balsam	21		no	
1173	46	SI	Isl 46-2	419734.1	6166452.5	1022	balsam	27		no	
1174	46	SI	Isl 46-2	419737.9	6166449.6	1027	spruce?	35		1in5	
1175	46	SI	Isl 46-2	419740.2	6166448.8	1027	spruce	33		no	
1176	46	SI	Isl 46-2	419738.7	6166447.1	1027	spruce	34		no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
1177	46	SI	Isl 46-2	419742.1	6166444.0	1025	spruce	25		no	
1178	46	SI	Isl 46-2	419741.9	6166439.5	1022	spruce	25		no	
1179	46	SI	Isl 46-2	419741.6	6166437.6	1022	spruce	40		1in5	
1180	46	SI	Isl 46-2	419738.8	6166440.2	1023	balsam	27		no	
1181	46	SI	Isl 46-2	419736.4	6166439.8	1023	spruce	17		no	
1182	46	SI	Isl 46-2	419738.5	6166438.4	1023	pine	41		no	
1183	46	SI	Isl 46-2	419736.1	6166436.4	1022	spruce	23		no	
1184	46	SI	Isl 46-2	419734.4	6166437.4	1022	balsam	28		1in5	cavity
1185	46	SI	Isl 46-2	419733.2	6166435.6	1022	spruce	32		no	
1186	46	SI	Isl 46-2	419735.0	6166434.4	1022	spruce	16		no	
1187	46	SI	Isl 46-2	419730.5	6166432.4	1021	spruce	36		no	
1188	46	SI	Isl 46-2	419728.3	6166430.2	1021	spruce	42		no	
1189	46	SI	Isl 46-2	419716.3	6166418.3	1018	spruce	28		1in5	
1190	46	SI	Isl 46-2	419719.0	6166417.6	1018	pine	31		no	
1191	46	SI	Isl 46-2	419723.3	6166425.6	1018	spruce	21		no	
1192	46	SI	Isl 46-2	419723.0	6166425.0	1018	balsam	11		no	
1193	46	SI	Isl 46-2	419711.8	6166410.1	1015	spruce	54		no	
1194	46	SI	Isl 46-2	419707.6	6166401.7	1013	balsam	19		1in5	
1195	46	SI	Isl 46-2	419704.7	6166402.4	1013	balsam	28		no	
1196	46	SI	Isl 46-2	419696.4	6166405.7	1015	spruce	29		no	
1197	46	SI	Isl 46-2	419697.6	6166407.5	1015	balsam	34		no	
1198	46	SI	Isl 46-2	419695.9	6166409.7	1015	spruce	37		no	
1199	46	SI	Isl 46-2	419694.1	6166407.8	1015	balsam	46		1in5	
1200	46	SI	Isl 46-2	419691.5	6166411.0	1014	spruce	13		no	
1201	46	SI	Isl 46-2	419687.4	6166414.0	1014	spruce	17		no	
1202	46	SI	Isl 46-2	419678.5	6166426.3	1015	balsam	14		no	
1203	46	SI	Isl 46-2	419676.4	6166427.9	1015	pine	39		no	
1204	46	SI	Isl 46-2	419679.4	6166429.2	1015		24		1in5	
1205	46	SI	Isl 46-2	419678.2	6166436.5	1016	balsam	17		no	
1206	46	SI	Isl 46-2	419682.8	6166436.8	1016	balsam	33		no	
1207	46	SI		419660.7	6166457.4	1013	balsam	33		no	
1208	46	SI	Isl 46-2	419690.0	6166444.4	1017		0		no	Bl 33.2cm or Pl 40.5cm
1209	46	SI	Isl 46-2	419694.5	6166448.3	1017	pine	42		1in5	
1210	46	SI	Isl 46-2	419692.8	6166450.1	1017	balsam	38		no	
1211	46	SI	Isl 46-2	419698.3	6166452.0	1019	balsam	37		no	
1212	46	SI	Isl 46-2	419697.9	6166453.1	1019	spruce	20		no	
1213	46	SI	Isl 46-2	419701.0	6166453.0	1019	pine	31		no	
1214	46	SI	Isl 46-2	419701.8	6166458.8	1019	pine	29		1in5	
1215	46	SI	Isl 46-2	419704.7	6166459.3	1019	balsam	18		no	
1216	46	SI	Isl 46-2	419705.9	6166468.1	1018	balsam	15		no	
1217	46	SI	Isl 46-2	419711.2	6166469.2	1020	spruce	33		no	
1218	46	SI	Isl 46-2	419716.2	6166469.1	1020	pine	51		no	
1219	46	SI	Isl 46-2	419714.4	6166467.5	1020	pine	20		1in5	
1220	46	SI	Isl 46-2	419716.4	6166467.7	1020	balsam	27		no	
1221	46	SI	Isl 46-2	419717.6	6166471.9	1023	spruce	22		no	
1222	46	SI	Isl 46-2	419723.5	6166464.8	1022	spruce	18		no	
1223	46	SI	Isl 46-2	419719.2	6166482.4	1023	balsam	34		no	
1224	46	SI		419735.5	6166493.4	1025	spruce	26		1in5	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
1225	46	SI		419695.2	6166488.2	1022	pine	20		no	
1226	46	SI	Isl 46-3	419689.7	6166521.4	1028	spruce	17		no	
1227	46	SI	Isl 46-3	419681.7	6166530.8	1028	spruce	44		no	
1228	46	SI	Isl 46-3	419682.8	6166528.5	1028	pine	24		no	
1229	46	SI	Isl 46-3	419684.4	6166515.8	1025	pine	18		1in5	
1230	46	SI	Isl 46-3	419682.2	6166516.1	1025	balsam	17		no	
1231	46	SI	Isl 46-3	419684.1	6166517.7	1025	balsam	17		no	
1232	46	SI	Isl 46-3	419682.3	6166513.4	1025	balsam	42		no	
1233	46	SI	Isl 46-3	419675.5	6166510.7	1024	pine	30		no	
1234	46	SI	Isl 46-3	419669.1	6166501.9	1021	spruce	33		1in5	
1235	46	SI	Isl 46-3	419662.9	6166498.4	1021	pine	39		no	
1236	46	SI	Isl 46-3	419660.7	6166498.7	1021	balsam	29		no	
1237	46	SI	Isl 46-3	419660.3	6166496.4	1021	spruce	20		no	
1238	46	SI	Isl 46-3	419663.0	6166496.3	1021	spruce	30		no	
1239	46	SI	Isl 46-3	419661.6	6166494.6	1021	balsam	17		1in5	
1240	46	SI	Isl 46-3	419655.3	6166491.8	1020	balsam	22		no	
1241	46	SI		419649.3	6166487.8	1028	spruce	54		no	
1242	46	SI	Isl 46-3	419644.2	6166502.4	1020	balsam	23		no	
1243	46	SI	Isl 46-3	419640.0	6166507.8	1021	spruce	27		no	
1244	46	SI	Isl 46-3	419639.3	6166505.9	1021	spruce	44		1in5	
1245	46	SI		419621.4	6166490.7	1014	spruce	38		no	
1246	46	SI	Isl 46-3	419634.4	6166510.2	1019	pine	23		no	
1247	46	SI	Isl 46-3	419634.5	6166514.6	1019	balsam	13		no	
1248	46	SI	Isl 46-3	419632.5	6166514.1	1019	spruce	16		no	
1249	46	SI	Isl 46-3	419631.7	6166518.3	1019	spruce	13		1in5	
1250	46	SI	Isl 46-3	419627.5	6166520.7	1020	spruce	17		no	
1251	46	SI	Isl 46-3	419628.2	6166522.5	1021	balsam	17		no	
1252	46	SI	Isl 46-3	419625.3	6166522.3	1020	balsam	19		no	
1253	46	SI	Isl 46-3	419612.2	6166532.0	1021	balsam	22		no	
1254	46	SI	Isl 46-3	419612.0	6166534.8	1023	spruce	24		1in5	
1255	46	SI	Isl 46-3	419609.9	6166535.5	1023	spruce	34		no	
1256	46	SI	Isl 46-3	419616.0	6166540.4	1025	pine	23		no	
1257	46	SI	Isl 46-3	419618.1	6166539.9	1025	balsam	38		no	
1258	46	SI	Isl 46-3	419618.3	6166541.2	1025	pine	37		no	
1259	46	SI	Isl 46-3	419621.4	6166546.3	1028	spruce	51		1in5	
1260	46	SI	Isl 46-3	419621.5	6166550.1	1030	balsam	24		no	
1261	46	SI	Isl 46-3	419623.1	6166548.9	1030	pine	34		no	
1262	46	SI	Isl 46-3	419625.4	6166552.4	1031	balsam	31		no	
1263	46	SI	Isl 46-3	419629.9	6166556.5	1033	balsam	14		no	
1264	46	SI	Isl 46-3	419630.9	6166557.9	1034	balsam	33		1in5	
1265	46	SI	Isl 46-3	419633.6	6166563.4	1035	pine	29		no	
1266	46	SI	Isl 46-3	419637.5	6166563.6	1036	pine	31		no	
1267	46	SI	Isl 46-3	419636.6	6166565.4	1036	spruce	14		no	
1268	46	SI	Isl 46-3	419640.2	6166564.8	1036	balsam	31		no	
1269	46	SI	Isl 46-3	419640.2	6166564.6	1036	balsam	23		1in5	
1270	46	SI	Isl 46-3	419648.1	6166567.8	1038	balsam	20		no	
1271	46	SI	Isl 46-3	419652.1	6166565.2	1036	balsam	16		no	
1272	46	SI	Isl 46-3	419649.6	6166564.5	1036	pine	29		no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
1273	46	SI	Isl 46-3	419651.3	6166563.9	1036	balsam	20		no	
1274	46	SI	Isl 46-3	419649.6	6166561.5	1040	balsam	16		1in5	
1275	46	SI	Isl 46-3	419653.7	6166560.7	1037	balsam	27		no	
1276	46	SI	Isl 46-3	419654.3	6166559.0	1037	pine	38		no	
1277	46	SI	Isl 46-3	419655.7	6166559.6	1037	balsam	21		no	
1278	46	SI	Isl 46-3	419655.0	6166562.0	1037	balsam	27		no	
1279	46	SI	Isl 46-3	419656.6	6166563.1	1037	balsam	15		1in5	
1280	46	SI	Isl 46-3	419657.7	6166561.8	1037	spruce	17		no	
1281	46	SI	Isl 46-3	419664.9	6166559.7	1036	balsam	29		no	
1282	46	SI	Isl 46-3	419662.6	6166558.6	1036	balsam	27		no	
1283	46	SI	Isl 46-3	419661.5	6166556.2	1036	balsam	17		no	
1284	46	SI	Isl 46-3	419664.9	6166547.2	1034	balsam	20		1in5	
1285	46	SI	Isl 46-3	419664.8	6166548.4	1034	balsam	20		no	
1286	46	SI	Isl 46-3	419672.4	6166553.2	1035	balsam	16		no	
1287	46	SI	Isl 46-3	419674.4	6166553.6	1035	spruce	38		no	
1288	46	SI	Isl 46-3	419673.9	6166541.1	1029	balsam	35		no	
1289	46	SI	Isl 46-3	419675.3	6166539.5	1029	balsam	26		1in5	
1290	46	SI		419608.5	6166588.0	1038	balsam	31		no	
1291	46	SI		419589.9	6166577.7	1035	balsam	33		no	
1292	46	SI		419576.3	6166619.1	1042	spruce	37		no	
1293	46	SI		419563.3	6166592.1	1033	pine	48		no	
1294	46	SI		419554.6	6166565.7	1028	balsam	25		1in5	
1295	46	SI		419526.7	6166556.3	1021	spruce	32		no	
1296	46	SI		419555.9	6166529.2	1019	pine	35		no	
1297	46	SI		419582.7	6166542.5	1026	pine	44		no	
1298	46	SI		419569.1	6166514.9	1016	spruce	28		no	
1299	46	SI		419493.6	6166603.3	1026	spruce	63		1in5	
1300	46	SI		419539.1	6166609.6	1034	balsam	36		no	
1301	46	SI		419559.4	6166645.3	1043	balsam	25		no	
1302	46	SI		419492.4	6166703.0	1044	pine	28		no	
1303	46	SI		419468.5	6166737.4	1045	balsam	23		no	
1304	46	SI		419440.5	6166715.8	1038	spruce	33		1in5	
1305	46	SI		419470.8	6166689.8	1040	spruce	37		no	
1306	46	SI		419475.2	6166690.4	1040	balsam	8		no	
1307	46	SI		419494.0	6166662.5	1036	pine	37		no	
1308	46	SI		419512.8	6166640.1	1035	pine	33		no	
1309	46	SI		419458.8	6166626.9	1025	spruce	33		1in5	
1310	46	SI		419430.4	6166650.3	1026	spruce	50		no	
1311	46	SI		419393.3	6166652.2	1023	balsam	43		no	
1312	46	SI		419789.4	6166194.1	1010	balsam	35		no	
1313	46	SI		419804.4	6166177.4	1011	balsam	36		no	
1314	46	SI		419786.5	6166147.4	1004	spruce	27		1in5	
1315	46	SI		419757.3	6166147.9	1004	pine	21		no	
1316	46	SI		419796.7	6166119.4	1004	balsam	33		no	
1317	46	SI		419820.2	6166157.0	1008	pine	33		no	
1318	46	SI		419799.6	6166097.2	1003	balsam	31		no	
1319	46	SI		419812.1	6166053.6	1002	balsam	32		1in5	
1320	46	SI		419819.4	6166043.1	1001	spruce	65		no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
1321	46	SI		419840.1	6166118.0	1008	spruce	43		no	
1322	46	SI		419892.1	6166068.2	1008	pine	38		no	
1323	46	SI		419927.6	6166049.8	1010	spruce	51		no	
1324	46	SI		419888.7	6166007.8	993	balsam	29		1in5	
1325	46	SI		419933.3	6166013.0	992	spruce	41		no	
1326	46	SI		419959.3	6166025.4	1002	spruce	49		no	
1327	46	SB		419976.4	6165985.7	1000	pine	34		no	
1328	46	SB		419987.9	6165934.8	997	pine	20		no	
1329	46	SB		420029.4	6165949.6	1006	pine	33		1in5	
1330	46	SB		420082.5	6165931.8	1006	pine	26		no	
1331	46	SB		420026.9	6165911.5	1000	pine	26		no	
1332	46	SB		420013.0	6165879.2	996	spruce	27		no	
1333	46	SB		420065.8	6165892.3	1002	spruce	56		no	
1334	46	SB		420079.0	6165859.8	999	spruce	31		1in5	
1335	46	SB		420119.7	6165873.6	1004	pine	16		no	
1336	46	SB		420120.0	6165873.1	1006	pine	25		no	
1337	46	SB		420125.8	6165836.1	1003	pine	30		no	
1338	46	SB		420102.2	6165834.1	997	balsam	29		no	
1339	46	SB		420127.6	6165813.0	1000	balsam	26		1in5	
1340	46	SB		420171.3	6165810.5	1008	pine	31		no	
1341	46	SB		420194.3	6165800.1	1010	balsam	31		no	
1342	46	SB		420175.2	6165774.9	1004	pine	30		no	
1343	46	SB		420221.8	6165767.8	1011	spruce	29		no	
1344	46	SB		419922.5	6165842.0	984	spruce	29		1in5	
1345	46	SI		419352.8	6166653.9	1020	pine	25		no	
1346	46	SI		419355.9	6166656.2	1020	spruce	29		no	
1347	46	SI		419547.0	6166775.9	1053	spruce	48		no	
1348	46	SI		419581.6	6166779.3	1053	balsam	48		yes	den
1349	46	SI		419596.6	6166787.0	1060	balsam	51		1in5	
1350	46	SI		419577.6	6166824.4	1062	balsam	49		yes	cavity
1351	46	SI		419577.2	6166825.2	1063	spruce	43		no	
1352	46	SI		419593.1	6166819.3	1064	pine	32		no	
1353	46	SI		419621.0	6166808.1	1061	balsam	29		no	
1354	46	SI		419641.8	6166806.4	1061	spruce	46		1in5	
1355	46	SI		419650.2	6166783.4	1058	balsam	39		no	
1356	46	SI		419690.5	6166764.8	1060	spruce	37		no	
1357	46	SI		419678.4	6166744.8	1058	balsam	34		no	
1358	46	SI		419603.8	6166700.4	1054	balsam	49		no	
1359	46	SI		419593.5	6166739.4	1057	balsam	44		1in5	
1360	46	SI		419587.1	6166747.6	1057	pine	27		no	
1361	16	SI	Isl 16-5	423551.4	6164280.0	1321	balsam	12		no	
1362	16	SI	Isl 16-5	423562.0	6164279.0	1323	balsam	12		no	
1363	16	SI	Isl 16-5	423563.0	6164279.9	1323	balsam	20		no	
1364	16	SI	Isl 16-5	423567.0	6164277.0	1326	pine	30		no	
1365	16	SI	Isl 16-5	423570.8	6164279.4	1326	balsam	17		1in5	
1366	16	SI	Isl 16-5	423571.9	6164287.0	1322	spruce	35		no	
1367	16	SI	Isl 16-5	423571.0	6164287.0	1322	spruce	14		no	
1368	16	SI	Isl 16-5	423579.0	6164287.0	1322	balsam	11		no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
1369	16	SI	Isl 16-5	423579.0	6164286.0	1322	balsam	14		no	
1370	16	SI	Isl 16-5	423577.5	6164281.6	1326	pine	34		1in5	
1371	16	SI	Isl 16-5	423580.8	6164280.0	1325	balsam	42		no	
1372	16	SI	Isl 16-5	423584.1	6164277.1	1326	pine	23		no	
1373	16	SI	Isl 16-5	423586.8	6164276.2	1328	balsam	47		no	
1374	16	SI	Isl 16-5	423591.1	6164277.3	1328	spruce	26		no	
1375	16	SI		423604.4	6164284.1	1326	balsam	29		1in5	
1376	16	SI	Isl 16-5	423592.6	6164287.9	1327	balsam	15		no	
1377	16	SI	Isl 16-5	423595.4	6164289.1	1327	spruce	15		no	
1378	16	SI	Isl 16-5	423593.3	6164290.0	1327	balsam	9		no	
1379	16	SI	Isl 16-5	423591.2	6164291.2	1327	spruce	11		no	
1380	16	SI	Isl 16-5	423593.7	6164291.7	1327	balsam	20		1in5	
1381	16	SI	Isl 16-5	423590.2	6164299.1	1327	pine	31		no	
1382	16	SI	Isl 16-5	423589.1	6164302.1	1326	pine	24		no	
1383	16	SI	Isl 16-5	423592.7	6164307.3	1329	balsam	14		no	
1384	16	SI	Isl 16-5	423591.3	6164308.0	1329	balsam	12		no	
1385	16	SI	Isl 16-5	423593.1	6164308.9	1329	balsam	9		1in5	
1386	16	SI	Isl 16-5	423589.6	6164312.4	1328	balsam	29		no	
1387	16	SI	Isl 16-5	423591.5	6164313.8	1328	spruce	29		no	
1388	16	SI	Isl 16-5	423588.7	6164314.8	1327	balsam	10		no	
1389	16	SI	Isl 16-5	423591.7	6164317.7	1327	balsam	11		no	
1390	16	SI	Isl 16-5	423598.5	6164339.1	1330	balsam	17		1in5	
1391	16	SI	Isl 16-5	423595.9	6164319.9	1328	balsam	32		no	
1392	16	SI	Isl 16-5	423597.0	6164320.0	1328	balsam	12		no	
1393	16	SI		423611.1	6164316.4	1333	spruce	20		no	
1394	16	SI	Isl 16-5	423595.8	6164338.3	1326	balsam	21		no	
1395	16	SI	Isl 16-5	423595.6	6164336.0	1333	balsam	15		1in5	
1396	16	SI	Isl 16-5	423598.5	6164339.6	1330	pine	33		no	
1397	16	SI	Isl 16-5	423600.0	6164340.0	1331	balsam	6		no	No GPS
1398	16	SI	Isl 16-5	423601.0	6164341.0	1331	balsam	6		no	No GPS
1399	16	SI	Isl 16-5	423603.4	6164342.5	1332	balsam	55		no	
1400	16	SI	Isl 16-5	423593.9	6164347.9	1327	balsam	37		1in5	
1401	16	SI	Isl 16-5	423588.6	6164344.0	1326	balsam	19		no	
1402	16	SI	Isl 16-5	423592.3	6164345.7	1324	balsam	14		no	
1403	16	SI	Isl 16-5	423579.7	6164344.2	1319	spruce	38		no	
1404	16	SI	Isl 16-5	423577.8	6164344.3	1319	balsam	7		no	
1405	16	SI	Isl 16-5	423577.7	6164342.9	1318	balsam	11		1in5	
1406	16	SI		423578.1	6164354.6	1325	balsam	10		no	
1407	16	SI	Isl 16-5	423576.0	6164345.0	1318	balsam	15		no	
1408	16	SI	Isl 16-5	423566.8	6164348.5	1319	balsam	45		no	
1409	16	SI	Isl 16-5	423568.8	6164336.8	1319	balsam	24		no	
1410	16	SI	Isl 16-5	423554.8	6164309.3	1315	balsam	13		1in5	
1411	16	SI	Isl 16-6	423547.9	6164157.1	1319	balsam	12		no	
1412	16	SI	Isl 16-6	423548.7	6164154.6	1319	balsam	18		no	
1413	16	SI	Isl 16-6	423547.7	6164152.8	1319	spruce	23		no	
1414	16	SI	Isl 16-6	423547.4	6164148.6	1319	pine	39		no	
1415	16	SI	Isl 16-6	423550.3	6164151.4	1318	balsam	23		1in5	
1416	16	SI	Isl 16-6	423551.0	6164152.0	1318	balsam	13		no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
1417	16	SI	Isl 16-6	423551.7	6164152.7	1318	balsam	7		no	
1418	16	SI	Isl 16-6	423552.0	6164150.6	1318	balsam	8		no	
1419	16	SI	Isl 16-6	423554.7	6164150.2	1319	spruce	40		no	
1420	16	SI	Isl 16-6	423555.7	6164146.2	1317	balsam	9		1in5	
1421	16	SI	Isl 16-6	423557.2	6164156.9	1337	balsam	18		no	
1422	16	SI	Isl 16-6	423558.2	6164158.6	1337	balsam	12		no	
1423	16	SI	Isl 16-6	423560.1	6164159.2	1337	pine	23		no	
1424	16	SI	Isl 16-6	423562.2	6164158.9	1337	balsam	11		no	
1425	16	SI	Isl 16-6	423560.8	6164157.4	1337	balsam	24		1in5	
1426	16	SI	Isl 16-6	423559.0	6164156.7	1337	balsam	25		no	
1427	16	SI	Isl 16-6	423559.6	6164131.6	1323	balsam	21		no	
1428	16	SI	Isl 16-6	423559.6	6164133.6	1313	balsam	11		no	
1429	16	SI	Isl 16-6	423558.6	6164151.0	1338	balsam	10		no	
1430	16	SI	Isl 16-6	423560.5	6164150.8	1338	balsam	9		1in5	
1431	16	SI	Isl 16-6	423559.2	6164149.4	1338	balsam	6		no	
1432	16	SI	Isl 16-6	423557.2	6164140.1	1326	balsam	19		no	
1433	16	SI	Isl 16-6	423564.3	6164141.7	1326	balsam	13		no	
1434	16	SI	Isl 16-6	423565.9	6164140.9	1326	balsam	12		no	
1435	16	SI	Isl 16-6	423564.2	6164140.3	1326	balsam	7		1in5	
1436	16	SI	Isl 16-6	423559.4	6164140.1	1327	balsam	23		no	
1437	16	SI	Isl 16-6	423567.8	6164134.9	1329	balsam	16		no	
1438	16	SI	Isl 16-6	423566.9	6164135.8	1329	balsam	26		no	
1439	16	SI	Isl 16-6	423564.9	6164137.1	1329	balsam	23		no	
1440	16	SI	Isl 16-6	423566.6	6164137.4	1329	balsam	12		1in5	
1441	16	SI	Isl 16-6	423562.7	6164137.4	1338	balsam	17		no	
1442	16	SI	Isl 16-6	423562.3	6164139.7	1338	balsam	14		no	
1443	16	SI	Isl 16-6	423565.4	6164135.0	1329	balsam	27		no	
1444	16	SI	Isl 16-6	423562.3	6164124.2	1315	balsam	40		no	
1445	16	SI	Isl 16-6	423563.5	6164122.4	1315	spruce	29		1in5	
1446	16	SI	Isl 16-6	423564.9	6164123.4	1316	pine	29		no	
1447	16	SI	Isl 16-6	423563.1	6164124.2	1316	pine	27		no	
1448	16	SI	Isl 16-6	423561.6	6164125.2	1316	balsam	23		no	
1449	16	SI	Isl 16-6	423569.9	6164122.0	1317	balsam	28		no	
1450	16	SI	Isl 16-6	423570.4	6164128.4	1317	balsam	26		1in5	
1451	16	SI	Isl 16-6	423571.0	6164127.0	1317	balsam	10		no	
1452	16	SI	Isl 16-6	423571.3	6164126.6	1317	balsam	30		no	
1453	16	SI	Isl 16-6	423573.6	6164130.0	1328	balsam	23		no	
1454	16	SI	Isl 16-6	423573.8	6164128.5	1327	balsam	20		no	
1455	16	SI	Isl 16-6	423577.7	6164121.2	1328	spruce	32		1in5	
1456	16	SI	Isl 16-6	423577.0	6164121.0	1328	balsam	9		no	
1457	16	SI	Isl 16-6	423584.0	6164111.4	1324	balsam	10		no	
1458	16	SI	Isl 16-6	423586.1	6164110.5	1324	balsam	9		no	
1459	16	SI	Isl 16-6	423585.0	6164109.8	1324	balsam	11		no	
1460	16	SI	Isl 16-6	423584.8	6164108.5	1324	balsam	9		1in5	
1461	16	SI	Isl 16-6	423586.7	6164108.9	1324	balsam	7		no	
1462	16	SI	Isl 16-6	423587.4	6164107.4	1324	balsam	13		no	
1463	16	SI	Isl 16-6	423577.0	6164105.0	1318	balsam	12		no	
1464	16	SI	Isl 16-6	423576.0	6164105.0	1318	balsam	12		no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
1465	16	SI	Isl 16-6	423574.5	6164104.6	1318	spruce	37		1in5	
1466	16	SI	Isl 16-6	423562.4	6164098.2	1321	pine	37		no	
1467	16	SI	Isl 16-6	423566.1	6164098.8	1319	balsam	42		no	
1468	16	SI	Isl 16-6	423555.3	6164096.0	1320	balsam	38		no	
1469	16	SI	Isl 16-6	423554.7	6164101.5	1322	pine	19		no	
1470	16	SI	Isl 16-6	423549.9	6164101.9	1327	spruce	29		1in5	
1471	16	SI	Isl 16-6	423549.2	6164102.5	1327	spruce	40		no	
1472	16	SI	Isl 16-6	423537.5	6164113.7	1323	pine	31		no	
1473	16	SI	Isl 16-6	423547.2	6164101.4	1314	balsam	59		no	
1474	16	SI	Isl 16-6	423532.6	6164106.2	1315	spruce	45		no	
1475	16	SI	Isl 16-6	423532.5	6164106.8	1315	spruce	34		1in5	
1476	16	SI	Isl 16-6	423528.6	6164114.0	1313	balsam	35		no	
1477	16	SI	Isl 16-6	423525.7	6164124.0	1321	balsam	36		no	
1478	16	SI	Isl 16-6	423524.0	6164125.5	1323	spruce	37		no	
1479	16	SI	Isl 16-6	423517.9	6164120.8	1314	spruce	22		no	
1480	16	SI	Isl 16-6	423514.4	6164130.7	1306	spruce	35		1in5	
1481	16	SI	Isl 16-6	423511.5	6164134.6	1306	balsam	30		no	
1482	16	SI	Isl 16-6	423510.3	6164137.5	1304	spruce	37		no	
1483	16	SI	Isl 16-6	423508.2	6164139.1	1304	spruce	50		no	
1484	16	SI	Isl 16-6	423513.8	6164145.9	1307	balsam	30		no	
1485	16	SI	Isl 16-6	423517.0	6164144.4	1308	balsam	22		1in5	
1486	16	SI	Isl 16-6	423525.6	6164158.5	1313	spruce	61		no	
1487	16	SI	Isl 16-6	423528.5	6164162.4	1312	balsam	13		no	
1488	16	SI	Isl 16-6	423528.6	6164162.5	1312	balsam	17		no	
1489	16	SI	Isl 16-6	423530.0	6164161.3	1312	balsam	23		no	
1490	16	SI	Isl 16-6	423529.6	6164163.6	1311	balsam	22		1in5	
1491	16	SI	Isl 16-6	423534.0	6164162.8	1314	balsam	35		no	
1492	16	SI	Isl 16-6	423533.3	6164167.1	1314	balsam	29		no	
1493	16	SI	Isl 16-6	423536.4	6164168.1	1315	balsam	21		no	
1494	16	SI	Isl 16-6	423537.3	6164167.6	1315	balsam	28		no	
1495	16	SI	Isl 16-6	423538.6	6164167.0	1315	balsam	9		1in5	
1496	16	SI	Isl 16-6	423536.7	6164162.3	1315	balsam	25		no	
1497	16	SI	Isl 16-6	423538.0	6164162.5	1315	balsam	20		no	
1498	16	SI	Isl 16-6	423540.7	6164163.6	1316	spruce	31		no	
1499	16	SI	Isl 16-6	423540.9	6164160.5	1316	balsam	13		no	
1500	16	SI	Isl 16-6	423540.4	6164159.6	1315	spruce	26		1in5	
1501	16	SI	Isl 16-6	423540.8	6164158.0	1318	balsam	47		no	
1502	16	SI	Isl 16-6	423542.2	6164157.0	1318	spruce	23		no	
1503	16	SI	Isl 16-6	423542.9	6164158.1	1318	spruce	50		no	
1504	16	SI		423340.4	6164108.5	1269	balsam	13		no	
1505	16	SI	Isl 16-3	423327.4	6164102.4	1260	balsam	50		1in5	
1506	16	SI	Isl 16-3	423325.4	6164105.2	1260	balsam	37		no	
1507	16	SI	Isl 16-3	423322.3	6164110.4	1265	balsam	31		no	
1508	16	SI	Isl 16-3	423322.6	6164112.6	1265	balsam	11		no	
1509	16	SI	Isl 16-3	423316.9	6164115.5	1253	balsam	30		no	
1510	16	SI	Isl 16-3	423310.3	6164121.6	1257	balsam	35		1in5	
1511	16	SI	Isl 16-3	423310.2	6164121.2	1257	spruce	18		no	
1512	16	SI	Isl 16-3	423305.9	6164125.6	1260	balsam	23		no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
1513	16	SI	Isl 16-3	423297.9	6164131.1	1250	balsam	19		no	
1514	16	SI	Isl 16-3	423297.5	6164131.2	1250	spruce	44		no	
1515	16	SI	Isl 16-3	423295.3	6164134.1	1256	balsam	15		1in5	
1516	16	SI	Isl 16-3	423295.6	6164137.5	1254	balsam	16		no	
1517	16	SI	Isl 16-3	423293.8	6164137.4	1254	spruce	39		no	
1518	16	SI	Isl 16-3	423285.1	6164136.6	1255	balsam	33		no	
1519	16	SI	Isl 16-3	423283.8	6164134.7	1255	balsam	27		no	
1520	16	SI	Isl 16-3	423284.7	6164133.2	1255	balsam	26		1in5	
1521	16	SI	Isl 16-3	423280.1	6164130.3	1255	balsam	51		no	
1522	16	SI	Isl 16-3	423277.8	6164117.7	1254	balsam	10		no	
1523	16	SI	Isl 16-3	423277.0	6164116.4	1254	balsam	32		no	
1524	16	SI	Isl 16-3	423279.4	6164116.3	1254	balsam	10		no	
1525	16	SI	Isl 16-3	423270.9	6164109.4	1254	spruce	37		1in5	
1526	16	SI	Isl 16-3	423272.0	6164105.6	1254	balsam	44		no	
1527	16	SI	Isl 16-3	423272.3	6164103.7	1257	spruce	12		no	
1528	16	SI	Isl 16-3	423273.1	6164103.3	1257	pine	11		no	
1529	16	SI	Isl 16-3	423279.0	6164101.3	1255	balsam	32		no	
1530	16	SI	Isl 16-3	423277.5	6164100.5	1255	balsam	14		1in5	
1531	16	SI	Isl 16-3	423277.3	6164098.9	1260	balsam	43		no	
1532	16	SI	Isl 16-3	423278.1	6164097.2	1260	balsam	9		no	
1533	16	SI	Isl 16-3	423283.5	6164098.2	1247	balsam	26		no	
1534	16	SI	Isl 16-3	423283.4	6164097.3	1247	balsam	22		no	
1535	16	SI	Isl 16-3	423287.6	6164095.1	1252	balsam	31		1in5	
1536	16	SI	Isl 16-3	423292.4	6164085.5	1263	spruce	26		no	
1537	16	SI	Isl 16-3	423294.1	6164085.1	1263	pine	42		no	
1538	16	SI	Isl 16-3	423295.2	6164082.8	1252	pine	28		no	
1539	16	SI	Isl 16-3	423301.0	6164078.2	1262	balsam	30		no	
1540	16	SI	Isl 16-3	423301.5	6164079.3	1262	balsam	15		1in5	
1541	16	SI	Isl 16-3	423302.6	6164077.9	1262	balsam	42		no	
1542	16	SI	Isl 16-3	423304.0	6164074.6	1261	spruce	35		no	
1543	16	SI	Isl 16-3	423307.4	6164071.6	1263	balsam	17		no	
1544	16	SI	Isl 16-3	423310.2	6164068.5	1263	balsam	47		no	
1545	16	SI	Isl 16-3	423311.2	6164067.0	1263	balsam	22		1in5	
1546	16	SI	Isl 16-3	423312.0	6164067.0	1263	balsam	10		no	
1547	16	SI	Isl 16-3	423322.2	6164072.7	1267	spruce	45		no	
1548	16	SI	Isl 16-3	423330.0	6164077.6	1268	balsam	37		no	
1549	16	SI	Isl 16-3	423331.4	6164076.8	1268	pine	21		no	
1550	16	SI	Isl 16-3	423334.6	6164085.8	1265	balsam	18		1in5	
1551	16	SI	Isl 16-3	423333.5	6164086.6	1265	balsam	13		no	
1552	16	SI	Isl 16-3	423335.8	6164086.7	1265	balsam	34		no	
1553	16	SI	Isl 16-3	423341.0	6164090.2	1266	spruce	28		no	
1554	16	SI	Isl 16-3	423337.1	6164090.2	1264	balsam	21		no	
1555	16	SI	Isl 16-3	423336.9	6164091.5	1264	balsam	27		1in5	
1556	16	SI	Isl 16-3	423341.6	6164091.5	1266	spruce	28		no	
1557	16	SI	Isl 16-3	423337.1	6164095.8	1267	balsam	45		no	
1558	16	SI	Isl 16-3	423335.9	6164097.1	1267	balsam	16		no	
1559	16	SI	Isl 16-3	423337.8	6164097.4	1267	pine	27		no	
1560	16	SI	Isl 16-3	423331.7	6164096.2	1263	balsam	23		1in5	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
1561	16	SI	Isl 16-3	423331.0	6164097.3	1263	spruce	18		no	
1562	16	SI	Isl 16-3	423327.5	6164097.5	1262	balsam	28		no	
1563	16	SI	Isl 16-4	423243.3	6164289.9	1252	spruce	35		no	
1564	16	SI	Isl 16-4	423239.1	6164289.0	1251	balsam	39		no	
1565	16	SI	Isl 16-4	423237.1	6164286.5	1253	balsam	37		1in5	
1566	16	SI	Isl 16-4	423237.9	6164296.5	1254	balsam	28		no	
1567	16	SI	Isl 16-4	423233.3	6164303.1	1258	balsam	37		no	
1568	16	SI	Isl 16-4	423233.4	6164303.4	1258	balsam	18		no	
1569	16	SI	Isl 16-4	423229.7	6164302.7	1251	balsam	30		no	
1570	16	SI	Isl 16-4	423226.5	6164301.8	1249	balsam	30		1in5	
1571	16	SI	Isl 16-4	423228.0	6164300.1	1249	balsam	24		no	
1572	16	SI	Isl 16-4	423226.4	6164299.2	1249	balsam	12		no	
1573	16	SI	Isl 16-4	423225.1	6164300.6	1249	balsam	14		no	
1574	16	SI	Isl 16-4	423222.6	6164303.8	1249	balsam	25		no	
1575	16	SI	Isl 16-4	423218.9	6164307.2	1247	balsam	18		1in5	
1576	16	SI	Isl 16-4	423211.8	6164298.8	1238	spruce	53		no	
1577	16	SI	Isl 16-4	423198.8	6164304.7	1238	spruce	36		no	
1578	16	SI	Isl 16-4	423207.1	6164295.0	1251	balsam	17		no	
1579	16	SI	Isl 16-4	423210.9	6164296.6	1251	balsam	19		no	
1580	16	SI	Isl 16-4	423211.0	6164294.9	1251	balsam	23		1in5	
1581	16	SI	Isl 16-4	423209.1	6164295.0	1251	spruce	21		no	
1582	16	SI	Isl 16-4	423207.2	6164290.0	1246	pine	17		no	
1583	16	SI	Isl 16-4	423204.0	6164286.3	1251	spruce	44		no	
1584	16	SI	Isl 16-4	423203.1	6164283.5	1231	balsam	17		no	
1585	16	SI	Isl 16-4	423203.5	6164281.8	1231	balsam	18		1in5	
1586	16	SI	Isl 16-4	423204.7	6164283.6	1231	spruce	43		no	
1587	16	SI	Isl 16-4	423205.7	6164282.3	1231	spruce	13		no	
1588	16	SI	Isl 16-4	423206.8	6164120.2	1230	balsam	27		no	
1589	16	SI	Isl 16-4	423206.0	6164121.0	1230	balsam	9		no	
1590	16	SI	Isl 16-4	423202.0	6164275.0	1235	spruce	35		1in5	
1591	16	SI	Isl 16-4	423202.0	6164271.0	1249	balsam	25		no	
1592	16	SI	Isl 16-4	423202.2	6164270.9	1249	balsam	21		no	
1593	16	SI	Isl 16-4	423203.4	6164269.1	1243	balsam	41		no	
1594	16	SI	Isl 16-4	423201.2	6164268.8	1243	balsam	15		no	
1595	16	SI	Isl 16-4	423200.6	6164268.1	1243	balsam	20		1in5	
1596	16	SI	Isl 16-4	423199.5	6164266.8	1243	balsam	14		no	
1597	16	SI	Isl 16-4	423201.2	6164267.3	1243	balsam	27		no	
1598	16	SI	Isl 16-4	423200.5	6164265.5	1243	spruce	62		no	
1599	16	SI	Isl 16-4	423212.0	6164258.1	1242	balsam	25		no	
1600	16	SI	Isl 16-4	423210.5	6164257.2	1242	balsam	35		1in5	
1601	16	SI	Isl 16-4	423213.1	6164255.6	1245	balsam	33		no	
1602	16	SI	Isl 16-4	423215.4	6164249.8	1243	spruce	37		no	
1603	16	SI	Isl 16-4	423219.2	6164248.3	1244	balsam	45		no	
1604	16	SI	Isl 16-4	423217.1	6164244.8	1244	spruce	45		no	
1605	16	SI	Isl 16-4	423223.7	6164239.9	1247	balsam	27		1in5	
1606	16	SI	Isl 16-4	423227.7	6164240.8	1249	balsam	47		no	
1607	16	SI		423230.8	6164222.9	1248	balsam	43		no	
1608	16	SI		423230.0	6164229.2	1247	balsam	26		no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
1609	16	SI		423233.2	6164231.5	1247	balsam	48		no	
1610	16	SI		423245.6	6164246.3	1254	spruce	41		1in5	
1611	16	SI		423248.8	6164233.1	1252	spruce	32		no	
1612	16	SI		423251.1	6164238.7	1251	balsam	27		no	
1613	16	SI	Isl 16-4	423246.1	6164257.3	1252	balsam	32		no	
1614	16	SI	Isl 16-4	423247.2	6164258.7	1252	balsam	36		no	
1615	16	SI	Isl 16-4	423246.2	6164259.1	1252	spruce	43		1in5	
1616	16	SI	Isl 16-4	423246.4	6164264.2	1252	balsam	31		no	
1617	16	SI	Isl 16-4	423245.2	6164265.1	1252	balsam	16		no	
1618	16	SI	Isl 16-4	423245.7	6164270.7	1254	spruce	46		no	
1619	16	SI	Isl 16-4	423242.5	6164237.7	1253	pine	31		no	
1620	16	SI	Isl 16-4	423240.7	6164274.0	1253	balsam	35		1in5	
1621	16	SI	Isl 16-4	423241.5	6164275.0	1253	balsam	18		no	
1622	16	SI	Isl 16-4	423243.4	6164283.4	1252	spruce	36		no	
1623	16	SI	Isl 16-4	423243.3	6164284.6	1252	spruce	28		no	
1624	16	SI		423634.6	6164475.1	1343	balsam	35		no	
1625	16	SI		423621.6	6164475.1	1340	balsam	29		1in5	
1626	16	SI		423615.0	6164472.3	1340	balsam	35		yes	den
1627	16	SI		423611.3	6164434.4	1333	balsam	33		no	
1628	16	SI		423637.8	6164413.4	1343	balsam	34		no	
1629	16	SI		423652.5	6164429.3	1345	balsam	19		no	
1630	16	SI		423657.3	6164370.4	1347	balsam	16		1in5	
1631	16	SI		423665.8	6164348.3	1345	pine	25		no	
1632	16	SI		423687.0	6164303.3	1343	pine	17		no	
1633	16	SI		423685.5	6164267.5	1338	spruce	23		no	
1634	16	SI		423683.7	6164226.4	1334	balsam	18		no	
1635	16	SI		423678.8	6164199.9	1334	spruce	42		1in5	
1636	16	SI		423677.0	6164199.8	1334	balsam	13		no	
1637	16	SI		423701.6	6164193.7	1335	balsam	22		no	
1638	16	SI		423706.7	6164152.8	1338	spruce	30		no	
1639	16	SI		423654.3	6164134.2	1340	balsam	29		no	
1640	16	SI		423616.4	6164109.8	1334	pine	38		1in5	
1641	16	SI		423614.0	6164140.0	1328		10		no	
1642	16	SI		423604.0	6164149.1	1328	spruce	32		no	
1643	16	SI		423604.6	6164152.6	1328	balsam	19		no	
1644	16	SI		423637.0	6164164.0	1330	balsam	14		no	
1645	16	SI		423603.9	6164186.3	1329	balsam	46		1in5	
1646	16	SI		423585.0	6164195.0	1328	balsam	13		no	
1647	16	SI		423575.4	6164210.4	1327	balsam	41		no	
1648	16	SI		423601.1	6164209.2	1329	spruce	41		no	
1649	16	SI		423652.5	6164189.3	1331	balsam	21		no	
1650	16	SI		423651.2	6164227.0	1331	balsam	17		1in5	
1651	16	SI		423638.7	6164234.9	1336	balsam	11		no	
1652	16	SI		423620.9	6164252.1	1334	balsam	11		no	
1653	16	SI		423607.1	6164255.3	1332	balsam	28		no	
1654	16	SI		423654.4	6164277.4	1340	pine	20		no	
1655	16	SI		423568.7	6164365.6	1321	spruce	64		1in5	
1656	16	SI		423570.5	6164379.2	1319	spruce	42		no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
1657	16	SI		423580.3	6164407.6	1323	balsam	31		no	
1658	16	SI		423582.2	6164408.6	1323	balsam	11		no	
1659	16	SI		423553.0	6164429.1	1316	balsam	24		no	
1660	16	SI		423546.0	6164462.4	1317	pine	24		1in5	
1661	16	SI		423529.0	6164417.7	1311	balsam	32		no	
1662	16	SI		423539.1	6164249.7	1319	spruce	15		no	
1663	16	SI		423518.6	6164232.5	1310	spruce	40		no	
1664	16	SI		423529.7	6164175.6	1324	balsam	57		no	
1665	16	SI		423545.5	6164180.2	1320	balsam	31		1in5	
1666	16	SI		423545.7	6164062.5	1314	pine	26		no	
1667	16	TI		423557.7	6164036.3	1314	balsam	14		no	
1668	16	TI		423528.0	6164035.7	1307	balsam	24		no	
1669	16	SI		423495.4	6164027.3	1300	pine	25		no	
1670	16	TI		423466.3	6163977.7	1293	balsam	32		1in5	
1671	16	TI		423478.3	6163987.8	1295	balsam	27		no	
1672	16	SI					balsam	12		no	
1673	16	SI		423389.1	6163985.7	1277	balsam	33		no	
1674	16	SI		423395.5	6164005.2	1279	balsam	28		no	
1675	16	SI		423398.1	6164007.4	1279	pine	23		1in5	
1676	16	SI		423390.4	6164014.5	1279	balsam	42		no	
1677	16	SI		423389.8	6164033.2	1277	balsam	19		no	
1678	16	SI		423407.5	6164051.5	1281	balsam	34		no	
1679	16	SI		423408.3	6164095.7	1284	balsam	47		no	
1680	16	SI		423424.3	6164100.8	1287	balsam	35		1in5	
1681	16	SI		423452.5	6164116.6	1292	balsam	29		no	
1682	16	SI		423456.9	6164125.2	1294	balsam	24		no	
1683	16	SI		423433.8	6164128.8	1290	balsam	34		no	
1684	16	SI		423438.2	6164155.1	1294	balsam	34		no	
1685	16	SI		423453.9	6164157.0	1298	balsam	26		1in5	
1686	16	SI		423427.9	6164178.8	1291	balsam	30		no	
1687	16	SI		423416.6	6164176.9	1290	spruce	48		no	
1688	16	SI		423433.5	6164187.5	1292	balsam	42		no	
1689	16	SI		423433.7	6164219.4	1291	spruce	46		no	
1690	16	SI		423462.6	6164220.1	1296	balsam	20		1in5	
1691	16	SI		423454.6	6164242.8	1297	balsam	27		no	
1692	16	SI		423460.3	6164267.5	1298	balsam	51		no	
1693	16	SI		423473.7	6164266.2	1300	balsam	21		no	
1694	16	SI		423443.1	6164308.9	1294	balsam	42		no	
1695	16	SI		423442.5	6164326.2	1293	balsam	44		1in5	
1696	16	SI		423416.9	6164328.7	1288	spruce	33		no	
1697	16	SI		423405.1	6164364.5	1285	balsam	40		no	
1698	16	SI		423411.4	6164380.3	1287	balsam	53		no	
1699	16	SI		423425.0	6164371.8	1288	balsam	61		no	
1700	16	SI		423436.0	6164359.2	1291	balsam	36		1in5	
1701	16	SI		423473.9	6164402.4	1300	balsam	68		no	
1702	16	SI		423474.1	6164410.0	1299	balsam	35		yes	16NP06
1703	16	SI		423461.3	6164459.9	1299	balsam	29		no	
1704	16	SI		423421.9	6164465.8	1306	balsam	26		no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
1705	16	SI		423426.2	6164448.9	1299	spruce	38		1in5	
1706	16	SI		423428.0	6164407.0	1290	balsam	11		no	
1707	16	SI		423385.2	6164433.7	1290	balsam	40		no	
1708	16	SI		423428.9	6164407.5	1290	balsam	44		no	
1709	16	SI		423354.6	6164441.4	1278	spruce	23		no	
1710	16	SI		423349.6	6164410.4	1277	balsam	35		1in5	
1711	16	SI		423372.9	6164374.8	1277	balsam	39		no	
1712	16	SI		423344.6	6164367.8	1273	balsam	31		no	
1713	16	SI		423371.9	6164337.2	1277	spruce	25		no	
1714	16	SI		423368.9	6164337.1	1277	balsam	8		no	
1715	16	SI		423361.2	6164299.7	1278	balsam	26		1in5	
1716	16	SI		423394.4	6164286.1	1283	balsam	35		no	
1717	16	SI		423417.9	6164298.4	1289	balsam	31		no	
1718	16	SI		423407.7	6164252.6	1286	balsam	34		no	
1719	16	SI		423398.9	6164223.0	1284	balsam	32		no	
1720	16	SI		423397.6	6164194.6	1284	balsam	23		1in5	
1721	16	SI		423378.0	6164169.9	1281	spruce	37		no	
1722	16	SI		423388.4	6164145.7	1282	balsam	45		no	
1723	16	SI		423368.4	6164098.6	1275	balsam	39		no	
1724	16	SI		423368.4	6164089.6	1277	pine	34		no	
1725	16	SI		423368.3	6164001.0	1274	balsam	43		1in5	
1726	16	SI		423371.3	6163980.8	1272	pine	26		no	
1727	16	SI		423353.8	6164007.1	1269	spruce	27		no	
1728	16	SI		423342.7	6164127.9	1272	spruce	28		no	
1729	16	SI		423366.4	6164136.5	1275	balsam	41		no	
1730	16	SI		423357.8	6164150.1	1273	balsam	39		1in5	
1731	16	SI		423359.0	6164161.1	1275	balsam	25		no	
1732	16	SI		423346.0	6164198.0	1280	balsam	12		no	
1733	16	SI		423347.5	6164198.7	1280	spruce	41		no	
1734	16	SI		423339.9	6164218.1	1271	balsam	61		no	
1735	16	SI		423370.9	6164213.9	1276	balsam	28		1in5	
1736	16	SI		423373.7	6164231.4	1279	balsam	21		no	
1737	16	SI		423368.8	6164258.6	1276	spruce	48		no	
1738	16	SI		423332.0	6164284.5	1272	balsam	53		no	
1739	16	SI		423335.2	6164309.2	1275	balsam	31		no	
1740	16	SI		423311.4	6164325.5	1263	balsam	39		1in5	
1741	16	SI		423310.1	6164326.9	1263	balsam	35		no	
1742	16	SI		423313.1	6164371.1	1267	balsam	28		no	
1743	16	SI		423317.2	6164395.6	1270	balsam	26		no	
1744	16	SI		423288.8	6164378.6	1254	pine	32		no	
1745	16	SI		423297.2	6164223.8	1261	balsam	28		1in5	
1746	16	SI		423296.0	6164205.7	1260	spruce	49		no	
1747	16	SI		423288.5	6164172.1	1261	balsam	27		no	
1748	16	SI		423291.3	6164172.7	1261	balsam	12		no	
1749	16	SI		423321.2	6164165.2	1266	balsam	36		no	
1750	16	SI		423251.1	6164409.4	1253	balsam	43		1in5	
1751	16	SI		423230.3	6164388.1	1247	balsam	60		no	
1752	16	SI		423241.7	6164369.2	1251	spruce	59		no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
1753	16	SI		423227.6	6164366.9	1249	balsam	23		no	
1754	16	SI		423226.2	6164354.5	1248	pine	43		no	
1755	16	SI		423237.5	6164343.9	1248	balsam	51		1in5	
1756	16	SI		423199.7	6164368.6	1244	balsam	52		no	
1757	16	SI		423190.5	6164347.6	1234	balsam	46		no	
1758	16	SI		423178.0	6164377.5	1236	balsam	52		no	
1759	16	SI		423165.5	6164387.4	1233	balsam	62		yes	cavity
1760	16	SI		423144.6	6164376.5	1230	spruce	38		1in5	
1761	16	SI		423167.6	6164364.1	1232	balsam	28		no	
1762	16	SI		423154.7	6164350.4	1228	balsam	36		no	
1763	16	SI		423146.9	6164321.8	1225	balsam	28		no	
1764	16	SI		423156.2	6164306.2	1230	balsam	48		yes	cavity
1765	16	SI		423177.4	6164294.6	1230	balsam	32		1in5	
1766	16	SI		423188.9	6164252.1	1232	balsam	40		no	
1767	16	SI		423192.7	6164226.5	1235	spruce	36		no	
1768	16	SI		423195.9	6164200.2	1237	balsam	24		no	
1769	16	SI		423196.0	6164199.0	1237	balsam	14		no	
1770	16	SI		423224.1	6164205.5	1245	balsam	24		1in5	
1771	16	SI		423250.9	6164201.0	1253	balsam	59		no	
1772	16	SI		423256.5	6164162.6	1255	balsam	30		no	
1773	16	SI		423227.4	6164168.6	1245	balsam	47		no	
1774	16	SI		423198.1	6164170.7	1239	spruce	40		no	
1775	16	SI		423201.7	6164130.1	1239	balsam	35		1in5	
1776	16	SI		423225.5	6164144.2	1245	balsam	16		no	
1777	16	SI		423247.2	6164138.7	1252	balsam	54		no	
1778	16	SI		423231.0	6164121.8	1245	balsam	21		yes	cavity
1779	16	SI		423259.6	6164110.8	1252	balsam	24		no	
1780	16	SI		423233.2	6164088.3	1245	spruce	31		1in5	
1781	16	SB		423206.6	6164081.5	1238	spruce	48		no	
1782	16	SI		423237.1	6164057.0	1242	balsam	59		yes	den
1783	16	SI		423268.6	6164051.4	1250	pine	58		no	
1784	16	SB		423253.1	6164008.5	1245	balsam	32		no	
1785	16	SB		423250.3	6164022.8	1245	balsam	37		1in5	
1786	16	SB		423234.5	6164029.0	1244	balsam	44		no	
1787	16	SB		423215.8	6164032.6	1240	pine	37		no	
1788	16	SB		423198.2	6164006.6	1236	balsam	34		no	
1789	16	SB		423208.3	6164007.3	1239	balsam	38		no	
1790	16	SB		423205.2	6163976.2	1239	pine	32		1in5	
1791	16	SB		423266.6	6163979.0	1245	balsam	32		no	
1792	16	SB		423303.4	6163926.1	1259	balsam	20		no	
1793	16	SB		423289.1	6163947.3	1252	balsam	25		no	
1794	16	SB		423259.5	6163939.8	1247	spruce	28		no	
1795	16	SB		423225.8	6163937.2	1241	balsam	42		1in5	
1796	16	SB		423280.9	6163925.9	1247	balsam	55		no	
1797	16	SB		423290.3	6163904.7	1247	balsam	23		no	
1798	16	SB		423258.6	6163893.6	1242	balsam	27		no	
1799	16	SB		423262.8	6163876.1	1241	pine	31		no	
1800	16	SB		423218.2	6163914.4	1235	balsam	50		1in5	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
1801	16	SB		423212.6	6163889.6	1231	balsam	24		no	
1802	16	SB		423202.9	6163846.8	1222	balsam	36		no	
1803	16	SB		423192.2	6163843.5	1218	balsam	45		no	
1804	16	SB		423196.5	6163876.4	1224	balsam	34		no	
1805	16	SB		423168.5	6163868.2	1216	balsam	42		1in5	
1806	16	SB		423182.3	6163893.7	1223	balsam	34		no	
1807	16	SB		423177.8	6163927.7	1228	pine	39		no	
1808	16	SB		423176.0	6163929.0	1228	balsam	7		no	
1809	16	SB		423164.2	6163936.1	1226	balsam	40		no	
1810	16	SB		423176.2	6163960.9	1231	balsam	36		1in5	
1811	16	SB		423178.4	6163958.8	1231	pine	15		no	
1812	16	SB		423153.3	6163969.5	1225	balsam	23		no	
1813	16	SB		423174.0	6164003.3	1230	balsam	17		no	
1814	16	SB		423174.2	6164002.9	1230	balsam	24		no	
1815	16	SB		423180.1	6164035.7	1232	spruce	62		1in5	
1816	16	SB		423134.7	6164013.6	1220	spruce	46		no	
1817	16	SB		423170.4	6164049.4	1231	balsam	38		no	
1818	16	SB		423155.9	6164041.7	1226	balsam	40		no	
1819	16	SB		423130.3	6164032.9	1219	balsam	42		no	
1820	16	SB		423168.0	6164070.1	1227	balsam	46		1in5	
1821	16	SB		423168.3	6164096.2	1227	balsam	38		no	
1822	16	SI		423190.9	6164121.5	1235	balsam	24		no	
1823	16	SI		423175.2	6164137.3	1231	balsam	35		no	
1824	16	SB		423142.7	6164146.3	1225	balsam	43		no	
1825	16	SI		423153.7	6164175.4	1227	spruce	46		1in5	
1826	16	SI		423153.3	6164173.8	1227	balsam	9		no	
1827	16	SI		423167.6	6164187.8	1231	balsam	51		no	
1828	16	SI		423169.7	6164207.1	1231	balsam	37		no	
1829	16	SI		423149.5	6164196.7	1226	balsam	66		no	
1830	16	SI		423152.2	6164215.5	1225	balsam	27		1in5	
1831	16	SI		423132.7	6164219.2	1221	spruce	31		no	
1832	16	SI		423122.9	6164255.3	1219	pine	30		no	
1833	16	SI		423152.3	6164260.9	1223	pine	37		no	
1834	16	SI		423146.6	6164288.2	1223	pine	36		no	
1835	16	SI		423119.6	6164278.7	1222	spruce	46		1in5	
1836	16	SI		423124.8	6164300.1	1224	balsam	24		no	
1837	16	SI		423126.4	6164302.5	1225	balsam	35		no	
1838	16	SI		423128.7	6164334.3	1227	balsam	39		no	
1839	16	SI		423133.9	6164351.2	1228	balsam	46		yes	cavity
1840	16	SI		423115.1	6164355.6	1223	pine	33		1in5	
1841	16	SI		423077.3	6164348.9	1213	spruce	47		no	
1842	16	SI		423087.9	6164326.5	1216	balsam	26		no	
1843	16	SI		423097.4	6164314.0	1216	balsam	9		no	
1844	16	SI		423095.6	6164313.7	1216	spruce	30		no	
1845	16	SI		423072.1	6164326.8	1214	balsam	36		1in5	16NP11
1846	16	SI		423069.1	6164304.5	1212	balsam	26		no	
1847	16	SI		423069.0	6164304.9	1212	balsam	51		no	
1848	16	SI		423049.4	6164339.4	1206	pine	18		no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
1849	16	SI		423037.4	6164327.6	1202	spruce	31		no	
1850	16	SB		423046.6	6164275.4	1205	balsam	33		1in5	
1851	16	SI		423089.2	6164265.9	1215	spruce	42		no	
1852	16	SB		423069.0	6164248.8	1209	balsam	34		no	
1853	16	SB		423043.1	6164232.4	1206	spruce	49		no	
1854	16	SI		423105.6	6164220.6	1214	balsam	41		no	
1855	16	SB		423107.3	6164196.5	1217	balsam	32		1in5	
1856	16	SB		423135.1	6164177.8	1224	balsam	28		no	
1857	16	SB		423105.2	6164172.5	1219	spruce	64		no	
1858	16	SB		423112.8	6164145.1	1220	balsam	30		no	
1859	16	SB		423112.6	6164145.4	1220	balsam	16		no	
1860	16	SB		423097.3	6164138.6	1214	balsam	29		1in5	
1861	16	SB		423114.3	6164130.2	1218	spruce	38		no	
1862	16	SB		423126.9	6164095.0	1219	balsam	36		no	
1863	16	SB		423108.9	6164064.3	1212	balsam	31		no	
1864	16	SB		423094.9	6164044.6	1205	pine	23		no	
1865	16	SB		423083.8	6164043.1	1202	balsam	35		1in5	
1866	16	SB		423085.6	6164029.5	1202	balsam	22		no	
1867	16	SB		423105.4	6164019.7	1211	pine	28		no	
1868	16	SB		423081.9	6164011.6	1203	balsam	32		no	
1869	16	SB		423058.6	6163985.8	1190	pine	33		no	
1870	16	SB		423066.0	6163977.5	1194	balsam	45		1in5	
1871	16	SB		423040.3	6163953.1	1189	spruce	57		no	
1872	16	SB		423054.0	6163942.6	1191	pine	35		no	
1873	16	SB		423069.3	6163940.3	1193	balsam	36		no	
1874	16	SB		423080.7	6163908.8	1193	balsam	26		no	
1875	16	SB		423138.9	6163910.8	1213	balsam	26		1in5	
1876	16	SB		423124.1	6163875.4	1204	balsam	29		no	
1877	16	SB		423134.4	6163852.6	1201	balsam	34		no	
1878	16	SB		423142.3	6163825.4	1197	pine	44		no	
1879	16	SB		423166.2	6163830.7	1208	pine	30		no	
1880	16	SB		423043.6	6163919.8	1186	spruce	30		1in5	
1881	16	SB		423044.9	6163917.0	1186	balsam	12		no	
1882	16	SB		423039.2	6163923.1	1184	pine	28		no	
1883	16	SB		423068.7	6164024.0	1197	spruce	44		no	
1884	16	SB		423061.5	6164040.9	1199	balsam	38		no	
1885	16	SB		423053.2	6164056.2	1196	balsam	24		1in5	
1886	16	SB		423058.7	6164063.2	1201	balsam	22		no	
1887	16	SB		423087.6	6164071.3	1209	balsam	38		no	
1888	16	SB		423075.5	6164116.4	1209	balsam	29		no	
1889	16	SB		423085.8	6164123.2	1211	balsam	19		no	
1890	16	SB		423079.0	6164154.4	1213	balsam	26		1in5	
1891	16	SB		423044.7	6164160.8	1205	spruce	36		no	
1892	16	SB		423037.2	6164180.6	1204	balsam	21		no	
1893	16	SB		423039.0	6164190.5	1205	pine	31		no	
1894	16	SB		423078.6	6164190.6	1208	balsam	24		no	
1895	16	SB		423058.9	6164205.4	1206	balsam	58		1in5	
1896	16	SB		423030.6	6164206.4	1201	balsam	31		no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
1897	16	SB		423029.7	6164219.0	1204	balsam	27		no	
1898	16	SB		423014.6	6164219.8	1196	balsam	24		no	
1899	16	SB		423020.7	6164238.6	1197	balsam	48		no	
1900	16	SB		423023.5	6164252.0	1202	pine	44		1in5	
1901	16	SB		422990.2	6164233.0	1188	spruce	30		no	
1902	16	SB		422991.6	6164255.8	1181	balsam	25		no	
1903	16	SB		422994.5	6164274.4	1192	balsam	24		no	
1904	16	SB		423003.7	6164294.0	1192	balsam	47		no	
1905	16	SB		423019.5	6164302.3	1198	spruce	38		1in5	
1906	16	SI		423015.8	6164335.1	1193	balsam	24		no	
1907	16	SB		422993.1	6164326.6	1191	balsam	43		no	
1908	16	SB		422964.2	6164306.8	1180	balsam	37		no	
1909	16	SB		422970.9	6164297.1	1184	spruce	28		no	
1910	16	SB		422980.7	6164278.2	1176	balsam	40		1in5	
1911	16	SB		422942.6	6164283.1	1172	balsam	44		no	
1912	16	SB		422963.5	6164263.2	1176	balsam	50		no	
1913	16	SB		422958.1	6164254.7	1175	balsam	45		no	
1914	16	SB		422971.4	6164252.8	1178	balsam	41		no	
1915	16	SB		422970.2	6164225.9	1181	balsam	30		1in5	
1916	16	SB		422980.9	6164218.6	1185	spruce	27		no	16NP10 ???
1917	16	SB		423001.6	6164206.3	1191	balsam	40		no	
1918	16	SB		423000.1	6164187.9	1190	pine	34		no	
1919	16	SB		422972.5	6164202.6	1183	balsam	33		no	
1920	16	SB		422970.4	6164173.8	1184	balsam	47		1in5	
1921	16	SB		422994.0	6164155.7	1190	pine	33		no	
1922	16	SB		423017.0	6164155.3	1199	balsam	38		no	
1923	16	SB		423025.4	6164150.1	1196	balsam	11		no	
1924	16	SB		423029.5	6164120.3	1197	balsam	29		no	
1925	16	SB		423006.1	6164111.9	1198	balsam	29		1in5	
1926	16	SB		423004.9	6164099.4	1199	balsam	33		no	
1927	16	SB		423017.3	6164083.6	1199	balsam	27		no	
1928	16	SB		423033.0	6164098.5	1196	balsam	15		no	
1929	16	SB		423035.7	6164096.7	1196	balsam	33		no	
1930	16	SB		423034.7	6164058.6	1196	balsam	19		1in5	
1931	16	SB		423039.9	6164035.5	1191	balsam	37		no	
1932	16	SB		423046.9	6164027.1	1192	balsam	30		no	
1933	16	SB		423023.9	6164020.3	1185	balsam	34		no	
1934	16	SB		423015.4	6164037.7	1185	pine	43		no	
1935	16	SB		422990.6	6164046.9	1184	pine	20		1in5	
1936	16	SB		423000.4	6164052.1	1185	pine	33		no	
1937	16	SB		423004.6	6164075.9	1196	pine	39		no	
1938	16	SB		422971.0	6164055.9	1186	pine	28		no	
1939	16	SB		422945.9	6164062.5	1182	spruce	27		no	
1940	16	SB		422965.2	6164076.8	1189	pine	23		1in5	
1941	16	SB		422976.1	6164081.4	1189	pine	26		no	
1942	16	SB		422966.0	6164083.8	1188	pine	38		no	
1943	16	SB		422979.1	6164097.7	1190	balsam	32		no	
1944	16	SB		422960.9	6164099.4	1186	spruce	33		no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
1945	16	SB		422962.1	6164112.8	1191	balsam	37		1in5	
1946	16	SB		422953.8	6164134.0	1186	balsam	16		no	
1947	16	SB		422962.6	6164139.6	1186	balsam	43		no	
1948	16	SB		422980.8	6164134.3	1196	balsam	29		no	
1949	16	SB		422947.7	6164168.5	1179	balsam	29		no	
1950	16	SB		422934.3	6164150.0	1180	balsam	33		1in5	
1951	16	SB		422924.7	6164135.5	1180	pine	30		no	
1952	16	SB		422918.5	6164130.0	1180	pine	33		no	
1953	16	SB		422913.1	6164122.1	1184	pine	32		no	
1954	16	SB		422916.6	6164107.4	1178	pine	42		no	
1955	16	SB		422918.6	6164106.4	1178	pine	15		1in5	
1956	16	SB		422931.4	6164092.0	1175	pine	21		no	
1957	16	SB		422912.2	6164082.2	1168	balsam	23		no	
1958	16	SB		422898.9	6164089.9	1168	pine	28		no	
1959	16	SB		422871.5	6164120.2	1169	balsam	35		no	
1960	16	SB		422871.8	6164143.7	1170	spruce	34		1in5	
1961	16	SB		422883.3	6164161.8	1168	balsam	32		no	
1962	16	SB		422908.4	6164163.9	1174	balsam	23		no	
1963	16	SB		422908.3	6164177.6	1174	balsam	39		no	
1964	16	SB		423097.7	6163791.0	1182	balsam	34		no	
1965	16	SB		423088.7	6163814.6	1182	balsam	28		1in5	
1966	16	SB		423079.9	6163814.7	1179	balsam	38		no	
1967	16	SB		423053.3	6163826.3	1173	balsam	54		no	
1968	16	SB		423038.3	6163791.1	1168	balsam	28		no	
1969	16	SB		422985.9	6163852.2	1162	pine	32		no	
1970	16	SB		422996.3	6163866.9	1164	pine	35		1in5	
1971	16	SB		422977.1	6163870.7	1160	spruce	37		no	
1972	16	SB		422997.9	6163905.1	1174	spruce	41		no	
1973	16	SB		422965.4	6163879.7	1159	spruce	40		no	
1974	16	SB		422945.0	6163886.3	1161	pine	29		no	
1975	16	SB		422979.4	6163914.4	1168	spruce	41		1in5	
1976	16	SB		422967.7	6163938.1	1168	balsam	31		no	
1977	16	SB		422935.6	6163913.3	1162	pine	27		no	
1978	16	SB		422919.2	6163924.2	1162	spruce	34		no	
1979	16	SB		422937.9	6163959.1	1165	balsam	43		no	
1980	16	SB		422914.7	6163942.1	1163	balsam	38		1in5	
1981	16	SB		422929.6	6163980.2	1169	balsam	43		no	
1982	16	SB		422912.9	6164002.0	1169	spruce	38		no	
1983	16	SB		422891.2	6163972.7	1164	balsam	27		no	
1984	16	SB		422867.6	6163965.4	1161	balsam	24		no	
1985	16	SB		422878.2	6163994.1	1165	pine	31		1in5	
1986	16	SB		422863.6	6164000.1	1163	balsam	28		no	
1987	16	SB		422843.4	6163972.5	1157	balsam	35		no	
1988	16	SB		422834.7	6163987.4	1158	balsam	41		no	
1989	16	SB		422848.6	6164010.8	1163	spruce	41		no	
1990	16	SB		422828.1	6164003.2	1156	balsam	38		1in5	
1991	16	SB		422820.5	6163993.6	1153	balsam	33		no	
1992	16	SB		422822.6	6164016.2	1158	pine	34		no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
1993	16	SB		422803.3	6164035.1	1158	spruce	35		no	
1994	16	SB		422821.5	6164039.6	1160	balsam	20		no	
1995	16	SB		422840.0	6164040.6	1163	pine	38		1in5	
1996	16	SB		422854.4	6164052.1	1165		27		no	
1997	16	SB		422841.3	6164068.9	1164	spruce	34		no	
1998	16	SB		422824.0	6164061.4	1161	balsam	36		no	
1999	16	SB		422807.7	6164054.9	1158	spruce	45		no	
2000	16	SB		422801.0	6164084.4	1158	balsam	45		1in5	
2001	16	SB		422826.9	6163959.0	1153	spruce	40		no	
2002	16	SB		422847.4	6163950.3	1156	spruce	44		no	
2003	16	SB		422861.3	6163938.9	1158	balsam	27		no	
2004	16	SB		422885.9	6163938.9	1159	balsam	38		no	
2005	16	SB		422886.5	6163913.0	1156	balsam	33		1in5	
2006	16	SB		422843.8	6163906.6	1154	pine	42		no	
2007	16	SB		422858.0	6163883.7	1152	balsam	33		no	
2008	16	SB		422875.7	6163876.7	1155	balsam	37		no	
2009	16	SB		422902.3	6163898.0	1158	pine	31		no	
2010	16	SB		422909.9	6163885.2	1159	pine	26		1in5	
2011	16	SB		422882.9	6163865.0	1156	balsam	16		no	
2012	16	SB		422846.8	6163865.8	1151	balsam	37		no	
2013	16	SB		422837.2	6163856.9	1149	pine	37		no	
2014	16	SB		422838.3	6163853.7	1146	pine	34		no	
2015	16	SB		422848.6	6163837.9	1141	pine	35		1in5	
2016	16	SB		422871.3	6163845.5	1146	pine	20		no	
2017	16	SB		422873.5	6163844.8	1146	balsam	18		no	
2018	16	SB		422908.2	6163854.8	1153	pine	40		no	
2019	16	SB		422933.3	6163856.5	1157	pine	27		no	
2020	16	SB		422923.3	6163842.0	1151	spruce	66		1in5	cavity
2021	16	SB		422907.5	6163815.1	1145	spruce	46		no	
2022	16	SB		422881.6	6163816.5	1140	pine	21		no	
2023	16	SB		422881.5	6163812.5	1139	balsam	60		no	
2024	16	SB		422892.4	6163798.2	1140	spruce	61		no	
2025	16	SB		422897.4	6163778.6	1132	balsam	22		1in5	
2026	16	SB		422897.3	6163778.3	1132	balsam	13		no	
2027	16	SB		422943.2	6163810.9	1146	spruce	22		no	
2028	16	SB		422945.7	6163811.1	1146	balsam	49		no	16NP08 ???
2029	16	SB		422953.6	6163792.2	1142	balsam	38		no	
2030	16	SB		422972.4	6163798.9	1153	spruce	57		1in5	
2031	16	SB		422977.1	6163819.5	1155	pine	42		no	
2032	16	SB		423004.6	6163803.4	1159	balsam	45		no	
2033	16	SB		423012.0	6163801.9	1162	balsam	23		no	
2034	16	SB		423009.4	6163776.7	1158	pine	26		no	
2035	16	SB		423007.0	6163775.8	1158	spruce	67		1in5	
2036	16	SB		423000.8	6163767.2	1156	balsam	25		yes	16NP04
2037	16	SB		423044.8	6163744.3	1162	balsam	29		no	
2038	16	SB		423019.2	6163732.6	1151	balsam	31		no	
2039	16	SB		423000.0	6163715.7	1146	spruce	45		no	
2040	16	SB		422980.4	6163718.7	1146	pine	30		1in5	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
2041	16	SB		422966.4	6163720.4	1143	balsam	25		no	
2042	16	SB		422949.5	6163716.0	1138	balsam	29		no	
2043	16	SB		422932.7	6163687.8	1136	pine	27		no	
2044	16	SB		422925.8	6163713.0	1133	balsam	36		no	
2045	16	SB		422946.3	6163724.9	1137	pine	35		1in5	
2046	16	SB		422966.7	6163748.5	1151	balsam	19		no	
2047	16	SB		422945.5	6163751.8	1137	balsam	44		no	
2048	16	SB		422946.1	6163772.2	1143	balsam	44		no	
2049	16	SB		422929.7	6163748.6	1137	pine	21		no	
2050	16	SB		422874.1	6164261.8	1150	pine	33		1in5	
2051	16	SB		422857.6	6164265.9	1150	balsam	36		no	
2052	16	SB		422854.1	6164277.0	1150	spruce	39		no	
2053	16	SB		422835.5	6164266.8	1150	balsam	51		no	
2054	16	SB		422853.1	6164227.4	1156	pine	45		no	
2055	16	SB		422824.6	6164221.8	1156	spruce	51		1in5	
2056	16	SB		422804.6	6164221.2	1154	pine	38		no	
2057	16	SB		422814.0	6164248.4	1147	spruce	35		no	
2058	16	SB		422815.8	6164250.4	1147	spruce	22		no	
2059	16	SB		422777.9	6164227.3	1148	spruce	30		no	
2060	16	SB		422787.7	6164214.5	1150	balsam	39		1in5	
2061	16	SB		422756.6	6164219.6	1145	balsam	41		no	
2062	16	SB		422784.4	6164195.8	1152	spruce	33		no	
2063	16	SB		422766.8	6164171.4	1149	pine	39		no	
2064	16	SB		422743.6	6164201.6	1144	balsam	49		no	
2065	16	SB		422725.9	6164205.7	1140	spruce	37		1in5	
2066	16	SB		422702.6	6164204.5	1139	balsam	32		no	
2067	16	SB		422709.1	6164183.5	1138	pine	25		no	
2068	16	SB		422727.8	6164169.8	1137	balsam	31		yes	cavity
2069	16	SB		422719.9	6164116.6	1138	balsam	32		no	
2070	16	SB		422705.2	6164125.2	1136	balsam	26		1in5	
2071	16	SB		422708.8	6164136.9	1135	balsam	44		no	
2072	16	SB		422696.2	6164174.2	1136	pine	30		no	
2073	16	SB		422682.1	6164161.2	1132	balsam	49		no	
2074	16	SB		422653.7	6164166.8	1128	pine	30		no	
2075	16	SB		422647.6	6164147.6	1127	spruce	33		1in5	16NP01
2076	16	SB		422648.0	6164146.0	1127	balsam	10		no	
2077	16	SB		422649.4	6164136.2	1126	balsam	43		no	
2078	16	SB		422619.2	6164126.1	1111	spruce	35		no	
2079	16	SB		422648.6	6164124.0	1125	balsam	34		no	
2080	16	SB		422681.9	6164113.3	1129	pine	39		1in5	
2081	16	SB		422695.8	6164095.8	1131	pine	39		no	
2082	16	SB		422649.9	6164093.5	1123	pine	17		no	
2083	16	SB		422649.8	6164068.2	1117	pine	33		no	
2084	16	SB		422628.6	6164068.5	1113	spruce	30		no	
2085	16	SB		422615.8	6164047.9	1108	balsam	22		1in5	
2086	16	SB		422608.1	6164038.8	1110	balsam	47		no	
2087	16	SB		422626.4	6164026.8	1112	balsam	38		no	
2088	16	SB		422648.9	6164040.0	1110	spruce	66		no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
2089	16	SB		422637.9	6164004.2	1110	balsam	34		no	
2090	16	SB		422658.4	6163996.3	1121	pine	29		1in5	
2091	16	SB		422680.5	6163998.7	1125	pine	25		no	
2092	16	SB		422694.3	6163988.2	1127	spruce	29		no	
2093	16	SB		422694.5	6164004.0	1130	pine	29		no	
2094	16	SB		422696.3	6164032.1	1127	pine	25		no	
2095	16	SB		422672.3	6164036.9	1117	pine	31		1in5	
2096	16	SB		422684.9	6164052.2	1127	balsam	17		no	
2097	16	SB		422689.0	6164068.1	1129	balsam	21		no	
2098	16	SB		422746.7	6164133.6	1147	balsam	51		no	
2099	16	SB		422753.0	6164115.6	1150	pine	32		no	
2100	16	SB		422725.3	6164076.6	1141	balsam	37		1in5	
2101	16	SB		422723.2	6164051.6	1139	spruce	23		no	
2102	16	SB		422734.6	6164039.9	1141	balsam	25		no	
2103	16	SB		422746.8	6164025.7	1144	balsam	11		no	
2104	16	SB		422746.2	6164017.5	1145	balsam	27		no	
2105	16	SB		422745.2	6164003.2	1135	balsam	25		1in5	
2106	16	SB		422751.6	6164006.8	1140	balsam	16		no	
2107	16	SB		422752.1	6163986.3	1142	balsam	20		no	
2108	16	SB		422754.7	6163984.2	1144	pine	27		no	
2109	16	SB		422747.4	6163980.6	1138	balsam	30		no	
2110	16	SB		422748.2	6163969.1	1135	balsam	51		1in5	
2111	16	SB		422713.5	6163974.5	1130	pine	29		no	
2112	16	SB		422714.3	6163960.4	1130	spruce	54		no	
2113	16	SB		422691.4	6163945.7	1121	spruce	58		no	
2114	16	SB		422727.0	6163934.7	1125	balsam	42		no	
2115	16	SB		422782.6	6163889.7	1128	pine	37		1in5	
2116	16	SB		422784.6	6163889.0	1128	pine	28		no	
2117	16	SB		422755.3	6163877.3	1125	spruce	42		no	
2118	16	SB		422800.5	6163852.8	1131	pine	26		no	
2119	16	SB		422819.8	6163825.5	1129	pine	31		no	
2120	16	SB		422868.3	6163733.2	1117	balsam	29		1in5	
2121	16	SB		422857.4	6163738.5	1116	balsam	25		no	
2122	16	SB		422890.5	6163660.1	1112	spruce	53		no	
2123	16	TI		422876.7	6163558.1	1100	balsam	25		no	
NN001	16	CT		424019.2	6163654.2	1304	spruce	18	cut	no	
NN002	16	TI		423601.5	6163986.7	1315	balsam	50	broken	no	
NN003	16	TI		423601.0	6163987.0	1315	balsam	10	broken	no	
NN004	16	TI	Isl 16-8	423620.8	6163965.3	1314		0		no	
NN005	16	TI	Isl 16-8	423622.2	6163965.6	1314		0		no	
NN006	16	TI	Isl 16-8	423627.3	6163964.0	1315		0		no	
NN007	16	TI	Isl 16-8	423634.2	6163964.8	1317		0		no	
NN008	16	TI	Isl 16-8	423635.3	6163963.4	1316		0		no	
NN009	16	TI	Isl 16-8	423640.2	6163961.2	1317		0		no	
NN010	16	TI	Isl 16-8	423644.0	6163960.0	1317		0		no	
NN011	16	TI	Isl 16-8	423647.1	6163960.1	1317		0		no	
NN012	16	TI	Isl 16-8	423646.2	6163958.4	1317		0		no	
NN013	16	TI	Isl 16-8	423645.7	6163956.6	1317		0		no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
NN014	16	TI	Isl 16-8	423649.1	6163959.2	1318		0		no	
NN015	16	TI	Isl 16-8	423652.1	6163958.4	1316		0		no	
NN016	16	TI	Isl 16-8	423656.1	6163959.7	1318		0		no	
NN017	16	TI	Isl 16-8	423658.4	6163957.6	1318		0		no	
NN018	16	TI	Isl 16-8	423657.7	6163955.9	1318		0		no	
NN019	16	TI	Isl 16-8	423666.4	6163952.2	1318		0		no	
NN020	16	TI	Isl 16-8	423668.6	6163952.2	1318		0		no	
NN021	16	TI	Isl 16-8	423667.7	6163950.4	1318		0		no	
NN022	16	TI	Isl 16-8	423669.3	6163948.2	1318		0		no	
NN023	16	TI	Isl 16-8	423675.1	6163951.6	1317		0		no	
NN024	16	TI	Isl 16-8	423675.1	6163948.7	1317		0		no	
NN025	16	TI	Isl 16-8	423675.7	6163941.3	1316		0		no	
NN026	16	TI	Isl 16-8	423674.1	6163934.6	1315		0		no	
NN027	16	TI	Isl 16-8	423674.8	6163933.6	1315		0		no	
NN028	16	TI	Isl 16-8	423673.1	6163927.1	1313		0		no	
NN029	16	TI	Isl 16-8	423673.3	6163926.0	1314		0		no	
NN030	16	TI	Isl 16-8	423672.1	6163925.2	1313		0		no	
NN031	16	TI	Isl 16-8	423669.8	6163915.9	1311		0		no	
NN032	16	TI	Isl 16-8	423667.5	6163912.3	1310		0		no	
NN033	16	TI	Isl 16-8	423663.9	6163914.6	1311		0		no	
NN034	16	TI	Isl 16-8	423661.5	6163914.5	1311		0		no	
NN035	16	TI	Isl 16-8	423659.7	6163918.3	1311		0		no	
NN036	16	TI	Isl 16-8	423656.6	6163917.7	1311		0		no	
NN037	16	TI	Isl 16-8	423650.1	6163917.6	1311		0		no	
NN038	16	TI	Isl 16-8	423640.5	6163916.8	1313		0		no	
NN039	16	TI	Isl 16-8	423640.1	6163917.3	1313		0		no	
NN040	16	TI	Isl 16-8	423636.1	6163917.7	1311		0		no	
NN041	16	TI	Isl 16-8	423633.5	6163920.0	1310		0		no	
NN042	16	TI	Isl 16-8	423631.9	6163918.5	1310		0		no	
NN043	16	TI	Isl 16-8	423626.4	6163918.3	1309		0		no	
NN044	16	TI	Isl 16-8	423625.9	6163917.5	1308		0		no	
NN045	16	TI	Isl 16-8	423624.9	6163918.6	1308		0		no	
NN046	16	TI	Isl 16-8	423629.1	6163923.6	1310		0		no	
NN047	16	TI	Isl 16-8	423624.9	6163923.7	1310		0		no	
NN048	16	TI	Isl 16-8	423623.1	6163926.5	1310		0		no	
NN049	16	TI	Isl 16-8	423625.0	6163931.7	1311		0		no	
NN050	16	TI	Isl 16-8	423619.2	6163942.6	1312		0		no	
NN051	16	TI	Isl 16-8	423621.8	6163940.8	1312		0		no	
NN052	16	TI	Isl 16-8	423623.1	6163940.5	1311		0		no	
NN053	16	TI	Isl 16-8	423625.0	6163941.1	1312		0		no	
NN054	16	TI	Isl 16-8	423625.2	6163938.8	1312		0		no	
NN055	16	TI	Isl 16-8	423616.4	6163949.9	1312		0		no	
NN056	16	TI		423732.5	6163922.6	1311	spruce	43	cut	no	
NN058	16	TI	Isl 16-7	423540.6	6163986.0	1306		0		no	
NN059	16	TI	Isl 16-7	423541.2	6163987.9	1306		0		no	
NN060	16	TI	Isl 16-7	423542.7	6163987.7	1306		0		no	
NN061	16	TI	Isl 16-7	423542.1	6163986.2	1306		0		no	
NN062	16	TI	Isl 16-7	423543.2	6163983.6	1306		0		no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
NN063	16	TI	Isl 16-7	423543.6	6163982.6	1306		0		no	
NN064	16	TI	Isl 16-7	423543.0	6163981.2	1306		0		no	
NN065	16	TI	Isl 16-7	423545.7	6163969.9	1304		0		no	
NN066	16	TI	Isl 16-7	423546.7	6163968.6	1304		0		no	
NN067	16	TI	Isl 16-7	423545.3	6163968.2	1304		0		no	
NN068	16	TI	Isl 16-7	423544.9	6163965.8	1302		0		no	
NN069	16	TI	Isl 16-7	423545.7	6163964.9	1302		0		no	
NN070	16	TI	Isl 16-7	423546.3	6163961.7	1302		0		no	
NN071	16	TI	Isl 16-7	423547.6	6163961.1	1302		0		no	
NN072	16	TI	Isl 16-7	423544.9	6163954.7	1302		0		no	
NN073	16	TI	Isl 16-7	423546.4	6163955.9	1302		0		no	
NN074	16	TI	Isl 16-7	423547.6	6163956.2	1302		0		no	
NN075	16	TI	Isl 16-7	423548.5	6163941.3	1300		0		no	
NN076	16	TI	Isl 16-7	423542.9	6163941.9	1301		0		no	
NN077	16	TI	Isl 16-7	423536.6	6163940.9	1299		0		no	
NN078	16	TI	Isl 16-7	423532.3	6163936.5	1298		0		no	
NN079	16	TI	Isl 16-7	423534.0	6163936.7	1298		0		no	
NN080	16	TI	Isl 16-7	423523.2	6163938.8	1296		0		no	
NN081	16	TI	Isl 16-7	423516.2	6163935.7	1296		0		no	
NN082	16	TI	Isl 16-7	423505.3	6163942.5	1294		0		no	
NN083	16	TI	Isl 16-7	423505.2	6163937.9	1293		0		no	
NN084	16	TI	Isl 16-7	423496.6	6163932.1	1289		0		no	
NN085	16	TI	Isl 16-7	423490.8	6163931.7	1288		0		no	
NN086	16	TI	Isl 16-7	423489.9	6163941.1	1290		0		no	
NN087	16	TI	Isl 16-7	423492.2	6163953.8	1294		0		no	
NN088	16	TI	Isl 16-7	423492.1	6163960.5	1295		0		no	
NN089	16	TI	Isl 16-7	423492.7	6163965.8	1294		0		no	
NN090	16	TI	Isl 16-7	423493.1	6163977.7	1298		0		no	
NN091	16	TI	Isl 16-7	423497.8	6163977.5	1296		0		no	
NN092	16	TI	Isl 16-7	423498.8	6163979.0	1296		0		no	
NN093	16	TI	Isl 16-7	423496.1	6163980.7	1296		0		no	
NN094	16	TI	Isl 16-7	423499.2	6163982.4	1296		0		no	
NN095	16	TI	Isl 16-7	423500.8	6163980.2	1296		0		no	
NN096	16	TI	Isl 16-7	423508.7	6163983.2	1298		0		no	
NN097	16	TI	Isl 16-7	423517.7	6163980.8	1301		0		no	
NN098	16	TI	Isl 16-7	423518.1	6163983.0	1301		0		no	
NN099	16	TI	Isl 16-7	423519.3	6163984.3	1301		0		no	
NN100	16	TI	Isl 16-7	423521.8	6163982.4	1301		0		no	
NN101	16	TI	Isl 16-7	423526.7	6163985.8	1303		0		no	
NN102	16	TI	Isl 16-7	423526.5	6163986.7	1303		0		no	
NN103	16	TI	Isl 16-7	423531.5	6163984.4	1304		0		no	
NN104	16	TI	Isl 16-1	423083.0	6163622.9	1151		0		no	
NN105	16	TI	Isl 16-1	423089.0	6163629.0	1155		0		no	
NN106	16	TI	Isl 16-1	423090.9	6163628.2	1155		0		no	
NN107	16	TI	Isl 16-1	423090.2	6163632.8	1157		0		no	
NN108	16	TI	Isl 16-1	423112.6	6163633.7	1165		0		no	
NN109	16	TI	Isl 16-1	423118.7	6163629.3	1165		0		no	
NN110	16	TI	Isl 16-1	423124.5	6163614.4	1164		0		no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
NN111	16	TI	Isl 16-1	423127.1	6163610.5	1160		0		no	
NN112	16	TI	Isl 16-1	423129.2	6163609.0	1159		0		no	
NN113	16	TI	Isl 16-1	423127.9	6163600.7	1162		0		no	
NN114	16	TI	Isl 16-1	423128.4	6163598.2	1162		0		no	
NN115	16	TI	Isl 16-1	423129.7	6163600.8	1162		0		no	
NN116	16	TI	Isl 16-1	423133.5	6163600.1	1161		0		no	
NN117	16	TI	Isl 16-1	423134.9	6163597.2	1161		0		no	
NN118	16	TI	Isl 16-1	423137.0	6163598.1	1161		0		no	
NN119	16	TI	Isl 16-1	423137.1	6163596.0	1161		0		no	
NN120	16	TI	Isl 16-1	423133.1	6163589.6	1160		0		no	
NN121	16	TI	Isl 16-1	423141.2	6163588.6	1162		0		no	
NN122	16	TI	Isl 16-1	423133.2	6163582.5	1156		0		no	
NN123	16	TI	Isl 16-1	423132.5	6163581.0	1155		0		no	
NN124	16	TI	Isl 16-1	423128.6	6163578.1	1155		0		no	
NN125	16	TI	Isl 16-1	423127.2	6163579.7	1155		0		no	
NN126	16	TI	Isl 16-1	423122.5	6163581.2	1153		0		no	
NN127	16	TI	Isl 16-1	423120.7	6163583.1	1153		0		no	
NN128	16	TI	Isl 16-1	423114.7	6163572.5	1151		0		no	
NN129	16	TI	Isl 16-1	423116.5	6163570.3	1151		0		no	
NN130	16	TI	Isl 16-1	423113.6	6163567.8	1150		0		no	
NN131	16	TI	Isl 16-1	423113.2	6163562.9	1148		0		no	
NN132	16	TI	Isl 16-1	423111.1	6163564.5	1147		0		no	
NN133	16	TI	Isl 16-1	423109.2	6163565.6	1147		0		no	
NN134	16	TI	Isl 16-1	423108.9	6163563.3	1147		0		no	
NN135	16	TI	Isl 16-1	423104.7	6163562.8	1142		0		no	
NN136	16	TI	Isl 16-1	423098.9	6163561.8	1142		0		no	
NN137	16	TI	Isl 16-1	423097.9	6163562.2	1142		0		no	
NN138	16	TI	Isl 16-1	423092.6	6163561.6	1135		0		no	
NN139	16	TI	Isl 16-1	423092.3	6163563.6	1135		0		no	
NN140	16	TI	Isl 16-1	423090.2	6163562.2	1135		0		no	
NN141	16	TI	Isl 16-1	423073.6	6163614.1	1144		0		no	
NN142	16	TI	Isl 16-1	423067.0	6163609.1	1141		0		no	
NN143	16	TI	Isl 16-1	423067.9	6163607.5	1141		0		no	
NN144	16	TI	Isl 16-1	423074.9	6163610.3	1142		0		no	
NN145	16	TI	Isl 16-1	423070.1	6163606.7	1145		0		no	
NN146	16	TI	Isl 16-1	423067.4	6163603.4	1139		0		no	
NN147	16	TI	Isl 16-1	423072.0	6163599.7	1136		0		no	
NN148	16	TI	Isl 16-1	423073.9	6163600.2	1136		0		no	
NN149	16	TI	Isl 16-1	423072.1	6163593.9	1140		0		no	
NN150	16	TI	Isl 16-1	423070.4	6163580.5	1137		0		no	
NN151	16	SI		423411.5	6163969.0	1281		0		no	delete (<15 cm)
NN152	16	SI		423410.0	6163968.0	1281		0		no	delete (<15 cm)
NN153	16	SI		423412.0	6163958.0	1280		0		no	delete (<15 cm)
NN154	16	SI		423413.5	6163958.7	1280		0		no	delete (<15 cm)
NN155	16	SI		423415.0	6163959.0	1280		0		no	delete (<15 cm)
NN156	16	SI		423394.4	6163958.5	1275		0		no	delete (<15 cm)
NN157	16	TI	Isl 16-2	423333.7	6163808.4	1258	balsam	38	broken	no	
NN158	16	TI	Isl 16-2	423335.9	6163807.6	1258	spruce	29	broken	no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
NN159	16	TI	Isl 16-2	423188.6	6163725.7	1196	spruce	55	broken	no	
NN160	16	TI		423394.2	6163622.8	1232	spruce	55	cut	no	
NN161	16	TI		423395.1	6163618.1	1231	balsam	27	broken	no	
NN162	16	TI		423424.0	6163620.4	1233	spruce	33	broken	no	
NN163	16	CT		423544.5	6163614.3	1232	spruce	34	broken	no	
NN165	47	SI	Isl 47-5	419324.0	6167572.6	1134	balsam	0		no	delete (<15cm)
NN167	47	TI	Isl 47-2	418741.5	6167989.4	1126		0		no	
NN168	47	TI	Isl 47-2	418746.1	6167989.3	1126		0		no	
NN169	47	TI	Isl 47-2	418746.6	6167988.7	1126		0		no	
NN170	47	TI	Isl 47-2	418748.4	6167986.5	1129		0		no	
NN171	47	TI	Isl 47-2	418760.4	6167993.3	1126		0		no	
NN172	47	TI	Isl 47-2	418766.9	6167992.6	1126		0		no	
NN173	47	TI	Isl 47-2	418762.5	6167989.6	1126		0		no	
NN174	47	TI	Isl 47-2	418775.7	6167992.2	1130		0		no	
NN175	47	TI	Isl 47-2	418783.0	6167987.5	1131		0		no	
NN176	47	TI	Isl 47-2	418785.6	6167987.3	1130		0		no	
NN177	47	TI	Isl 47-2	418788.1	6167980.6	1130		0		no	
NN178	47	TI	Isl 47-2	418789.5	6167979.7	1130		0		no	
NN179	47	TI	Isl 47-2	418788.7	6167964.8	1127		0		no	
NN180	47	TI	Isl 47-2	418789.9	6167961.1	1127		0		no	
NN181	47	TI	Isl 47-2	418788.4	6167953.6	1124		0		no	
NN182	47	TI	Isl 47-2	418789.2	6167950.3	1122		0		no	
NN183	47	TI	Isl 47-2	418792.2	6167947.1	1123		0		no	
NN184	47	TI	Isl 47-2	418791.9	6167946.4	1123		0		no	
NN185	47	TI	Isl 47-2	418787.4	6167939.5	1119		0		no	
NN186	47	TI	Isl 47-2	418787.2	6167939.5	1119		0		no	
NN187	47	TI	Isl 47-2	418786.8	6167939.4	1119		0		no	
NN188	47	TI	Isl 47-2	418770.2	6167943.1	1125		0		no	
NN189	47	TI	Isl 47-2	418769.7	6167943.3	1125		0		no	
NN190	47	TI	Isl 47-2	418769.3	6167940.3	1124		0		no	
NN191	47	TI	Isl 47-2	418768.4	6167940.4	1124		0		no	
NN192	47	TI	Isl 47-2	418757.8	6167941.9	1118		0		no	
NN193	47	TI	Isl 47-2	418754.8	6167942.1	1119		0		no	
NN194	47	TI	Isl 47-2	418753.2	6167939.9	1119		0		no	
NN195	47	TI	Isl 47-2	418747.8	6167942.8	1113		0		no	
NN196	47	TI	Isl 47-2	418739.1	6167947.1	1109		0		no	
NN197	47	TI	Isl 47-2	418739.2	6167950.8	1110		0		no	
NN198	47	TI	Isl 47-2	418738.8	6167950.5	1110		0		no	
NN199	47	TI	Isl 47-2	418739.0	6167954.4	1109		0		no	
NN200	47	TI	Isl 47-2	418740.3	6167959.7	1118		0		no	
NN201	47	TI	Isl 47-2	418734.5	6167962.0	1118		0		no	
NN202	47	TI	Isl 47-2	418737.3	6167965.8	1126		0		no	
NN203	47	TI	Isl 47-2	418738.0	6167966.8	1126		0		no	
NN204	47	TI	Isl 47-2	418743.7	6167978.2	1131		0		no	
NN205	47	TI	Isl 47-2	418745.1	6167980.4	1122		0		no	
NN206	47	TI	Isl 47-2	418740.3	6167982.9	1129		0		no	
NN207	47	TI	Isl 47-3	419040.9	6167785.2	1141		0		no	
NN208	47	TI	Isl 47-3	419040.3	6167786.4	1141		0		no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
NN209	47	TI	Isl 47-3	419041.2	6167785.7	1141		0		no	
NN210	47	TI	Isl 47-3	419047.5	6167786.2	1141		0		no	
NN211	47	TI	Isl 47-3	419069.4	6167772.7	1142		0		no	
NN212	47	TI	Isl 47-3	419070.1	6167772.4	1142		0		no	
NN213	47	TI	Isl 47-3	419076.0	6167767.4	1142		0		no	
NN214	47	TI	Isl 47-3	419075.9	6167766.3	1142		0		no	
NN215	47	TI	Isl 47-3	419076.2	6167766.7	1142		0		no	
NN216	47	TI	Isl 47-3	419076.2	6167765.5	1142		0		no	
NN217	47	TI	Isl 47-3	419076.9	6167754.2	1140		0		no	
NN218	47	TI	Isl 47-3	419051.9	6167728.7	1134		0		no	
NN219	47	TI	Isl 47-3	419051.5	6167729.3	1134		0		no	
NN220	47	TI	Isl 47-3	419038.8	6167728.8	1132		0		no	
NN221	47	TI	Isl 47-3	419032.2	6167734.9	1133		0		no	
NN222	47	TI	Isl 47-3	419024.4	6167742.6	1130		0		no	
NN223	47	TI	Isl 47-3	419022.1	6167746.2	1131		0		no	
NN224	47	TI	Isl 47-3	419016.2	6167747.0	1127		0		no	
NN225	47	TI	Isl 47-3	419011.7	6167747.4	1133		0		no	
NN226	47	TI	Isl 47-3	419013.2	6167754.0	1133		0		no	
NN227	47	TI	Isl 47-3	419012.6	6167757.6	1133		0		no	
NN228	47	TI	Isl 47-3	419016.8	6167760.7	1136		0		no	
NN229	47	TI	Isl 47-3	419027.1	6167772.6	1135		0		no	
NN230	47	TI	Isl 47-3	419031.2	6167772.5	1137		0		no	
NN231	47	TI	Isl 47-3	419033.8	6167774.3	1137		0		no	
NN232	47	TI	Isl 47-3	419033.5	6167774.9	1137		0		no	
NN233	47	TI	Isl 47-1	418657.4	6167740.9	1075		0		no	
NN234	47	TI	Isl 47-1	418657.6	6167741.8	1075		0		no	
NN235	47	TI	Isl 47-1	418658.1	6167741.1	1075		0		no	
NN236	47	TI	Isl 47-1	418664.4	6167740.2	1075		0		no	
NN237	47	TI	Isl 47-1	418673.3	6167737.2	1078		0		no	
NN238	47	TI	Isl 47-1	418682.0	6167732.0	1077		0		no	
NN239	47	TI	Isl 47-1	418684.9	6167728.8	1076		0		no	
NN240	47	TI	Isl 47-1	418686.0	6167727.5	1076		0		no	
NN241	47	TI	Isl 47-1	418685.5	6167726.6	1076		0		no	
NN242	47	TI	Isl 47-1	418697.7	6167719.8	1075		0		no	
NN243	47	TI	Isl 47-1	418698.8	6167719.9	1075		0		no	
NN244	47	TI	Isl 47-1	418700.0	6167713.5	1075		0		no	
NN245	47	TI	Isl 47-1	418701.2	6167713.5	1075		0		no	
NN246	47	TI	Isl 47-1	418700.5	6167712.3	1075		0		no	
NN247	47	TI	Isl 47-1	418701.7	6167712.0	1075		0		no	
NN248	47	TI	Isl 47-1	418700.6	6167703.5	1073		0		no	
NN249	47	TI	Isl 47-1	418701.8	6167702.8	1073		0		no	
NN250	47	TI	Isl 47-1	418700.9	6167700.0	1072		0		no	
NN251	47	TI	Isl 47-1	418694.2	6167696.3	1069		0		no	
NN252	47	TI	Isl 47-1	418693.2	6167695.7	1069		0		no	
NN253	47	TI	Isl 47-1	418689.7	6167688.8	1068		0		no	
NN254	47	TI	Isl 47-1	418689.2	6167688.1	1068		0		no	
NN255	47	TI	Isl 47-1	418685.3	6167683.8	1068		0		no	
NN256	47	TI	Isl 47-1	418679.8	6167681.2	1066		0		no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
NN257	47	TI	Isl 47-1	418679.0	6167680.7	1066		0		no	
NN258	47	TI	Isl 47-1	418678.5	6167679.0	1066		0		no	
NN259	47	TI	Isl 47-1	418674.0	6167675.1	1067		0		no	
NN260	47	TI	Isl 47-1	418673.6	6167675.9	1067		0		no	
NN261	47	TI	Isl 47-1	418664.6	6167674.4	1065		0		no	
NN262	47	TI	Isl 47-1	418655.1	6167678.3	1064		0		no	
NN263	47	TI	Isl 47-1	418650.9	6167682.3	1064		0		no	
NN264	47	TI	Isl 47-1	418645.7	6167687.2	1064		0		no	
NN265	47	TI	Isl 47-1	418644.6	6167687.2	1064		0		no	
NN266	47	TI	Isl 47-1	418640.2	6167693.6	1064		0		no	
NN267	47	TI	Isl 47-1	418640.0	6167703.3	1064		0		no	
NN268	47	TI	Isl 47-1	418641.2	6167704.1	1064		0		no	
NN269	47	TI	Isl 47-1	418640.6	6167704.4	1064		0		no	
NN270	47	TI	Isl 47-1	418640.0	6167704.6	1064		0		no	
NN271	47	TI	Isl 47-1	418646.9	6167714.2	1066		0		no	
NN272	47	TI	Isl 47-1	418646.3	6167714.0	1066		0		no	
NN273	47	TI	Isl 47-1	418642.9	6167715.4	1065		0		no	
NN274	47	TI	Isl 47-1	418643.1	6167715.5	1065		0		no	
NN275	47	TI	Isl 47-1	418647.5	6167725.4	1069		0		no	
NN276	47	TI	Isl 47-1	418647.4	6167725.2	1069		0		no	
NN277	47	TI	Isl 47-1	418651.5	6167733.9	1072		0		no	
NN278	47	TI	Isl 47-1	418654.7	6167735.7	1074		0		no	
NN279	47	TI	Isl 47-4	418890.4	6167665.5	1098		0		no	
NN280	47	TI	Isl 47-4	418890.9	6167666.7	1098		0		no	
NN281	47	TI	Isl 47-4	418891.2	6167665.3	1098		0		no	
NN282	47	TI	Isl 47-4	418894.8	6167666.0	1098		0		no	
NN283	47	TI	Isl 47-4	418900.8	6167661.9	1098		0		no	
NN284	47	TI	Isl 47-4	418905.0	6167657.7	1099		0		no	
NN285	47	TI	Isl 47-4	418906.1	6167657.7	1099		0		no	
NN286	47	TI	Isl 47-4	418909.4	6167648.9	1099		0		no	
NN287	47	TI	Isl 47-4	418910.1	6167645.1	1097		0		no	
NN288	47	TI	Isl 47-4	418910.1	6167645.1	1097		0		no	
NN289	47	TI	Isl 47-4	418916.1	6167639.5	1097		0		no	
NN290	47	TI	Isl 47-4	418907.2	6167635.7	1095		0		no	
NN291	47	TI	Isl 47-4	418904.9	6167632.7	1094		0		no	
NN292	47	TI	Isl 47-4	418904.3	6167631.1	1094		0		no	
NN293	47	TI	Isl 47-4	418896.4	6167622.9	1092		0		no	
NN294	47	TI	Isl 47-4	418896.8	6167622.3	1092		0		no	
NN295	47	TI	Isl 47-4	418895.7	6167620.1	1091		0		no	
NN296	47	TI	Isl 47-4	418891.4	6167617.9	1092		0		no	
NN297	47	TI	Isl 47-4	418889.4	6167614.8	1091		0		no	
NN298	47	TI	Isl 47-4	418883.9	6167600.4	1087		0		no	
NN299	47	TI	Isl 47-4	418877.2	6167595.6	1084		0		no	
NN300	47	TI	Isl 47-4	418869.8	6167607.9	1084		0		no	
NN301	47	TI	Isl 47-4	418868.9	6167612.1	1085		0		no	
NN302	47	TI	Isl 47-4	418867.7	6167612.5	1085		0		no	
NN303	47	TI	Isl 47-4	418860.9	6167620.0	1086		0		no	
NN304	47	TI	Isl 47-4	418861.2	6167622.2	1086		0		no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
NN305	47	TI	Isl 47-4	418860.0	6167622.4	1086		0		no	
NN306	47	TI	Isl 47-4	418855.8	6167628.9	1085		0		no	
NN307	47	TI	Isl 47-4	418863.6	6167636.5	1085		0		no	
NN308	47	TI	Isl 47-4	418865.7	6167638.9	1090		0		no	
NN309	47	TI	Isl 47-4	418870.3	6167639.9	1092		0		no	
NN310	47	TI	Isl 47-4	418871.5	6167639.5	1092		0		no	
NN311	47	TI	Isl 47-4	418870.9	6167640.9	1092		0		no	
NN312	47	TI	Isl 47-4	418873.8	6167646.4	1090		0		no	
NN313	47	TI	Isl 47-4	418877.2	6167649.0	1090		0		no	
NN314	47	TI	Isl 47-4	418882.5	6167656.2	1093		0		no	
NN315	47	TI	Isl 47-4	418883.9	6167655.8	1093		0		no	
NN316	47	TI	Isl 47-4	418883.5	6167657.0	1093		0		no	
NN317	47	TI	Isl 47-4	418884.2	6167663.6	1094		0		no	
NN318	47	SI	Isl 47-6	419150.3	6167462.3	1109	spruce	31	cut	no	
NN320	47	SI	Isl 47-6	419161.7	6167410.8	1100	balsam	42	cut	no	
NN322	47	SI	Isl 47-7	419368.2	6167340.6	1116	balsam	19	cut	no	
NN323	47	SI	Isl 47-7	419353.7	6167332.1	1114	pine	39	cut	no	
NN324	46	TI	Isl 46-5	419883.3	6166751.5	1077		0		no	
NN325	46	TI	Isl 46-5	419883.5	6166752.8	1079		0		no	
NN326	46	TI	Isl 46-5	419887.1	6166754.9	1079		0		no	
NN327	46	TI	Isl 46-5	419888.7	6166753.8	1079		0		no	
NN328	46	TI	Isl 46-5	419886.2	6166752.1	1078		0		no	
NN329	46	TI	Isl 46-5	419890.3	6166747.2	1077		0		no	
NN330	46	TI	Isl 46-5	419893.1	6166745.0	1076		0		no	
NN331	46	TI	Isl 46-5	419894.1	6166743.3	1076		0		no	
NN332	46	TI	Isl 46-5	419889.4	6166743.3	1076		0		no	
NN333	46	TI	Isl 46-5	419869.2	6166741.4	1076		0		no	
NN334	46	TI	Isl 46-5	419890.8	6166742.4	1078		0		no	
NN335	46	TI	Isl 46-5	419893.1	6166740.1	1079		0		no	
NN336	46	TI	Isl 46-5	419899.4	6166743.0	1081		0		no	
NN337	46	TI	Isl 46-5	419907.8	6166730.6	1078		0		no	
NN338	46	TI	Isl 46-5	419912.7	6166724.4	1078		0		no	
NN339	46	TI	Isl 46-5	419913.2	6166723.6	1076		0		no	
NN340	46	TI	Isl 46-5	419907.1	6166720.2	1072		0		no	
NN341	46	TI	Isl 46-5	419906.5	6166716.0	1074		0		no	
NN342	46	TI	Isl 46-5	419902.6	6166710.9	1076		0		no	
NN343	46	TI	Isl 46-5	419903.6	6166710.5	1076		0		no	
NN344	46	TI	Isl 46-5	419901.7	6166706.0	1073		0		no	
NN345	46	TI	Isl 46-5	419900.6	6166706.8	1073		0		no	
NN346	46	TI	Isl 46-5	419896.9	6166701.7	1071		0		no	
NN347	46	TI	Isl 46-5	419896.0	6166702.0	1071		0		no	
NN348	46	TI	Isl 46-5	419895.0	6166699.3	1066		0		no	
NN349	46	TI	Isl 46-5	419894.5	6166693.2	1066		0		no	
NN350	46	TI	Isl 46-5	419894.9	6166692.4	1066		0		no	
NN351	46	TI	Isl 46-5	419882.8	6166687.6	1063		0		no	
NN352	46	TI	Isl 46-5	419884.8	6166690.6	1063		0		no	
NN353	46	TI	Isl 46-5	419885.5	6166691.7	1063		0		no	
NN354	46	TI	Isl 46-5	419871.9	6166689.3	1062		0		no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
NN355	46	TI	Isl 46-5	419868.3	6166692.6	1063		0		no	
NN356	46	TI	Isl 46-5	419865.7	6166694.0	1064		0		no	
NN357	46	TI	Isl 46-5	419863.0	6166694.5	1065		0		no	
NN358	46	TI	Isl 46-5	419861.3	6166694.7	1065		0		no	
NN359	46	TI	Isl 46-5	419855.9	6166696.7	1066		0		no	
NN360	46	TI	Isl 46-5	419854.2	6166701.4	1066		0		no	
NN361	46	TI	Isl 46-5	419852.1	6166702.3	1068		0		no	
NN362	46	TI	Isl 46-5	419853.5	6166703.9	1068		0		no	
NN363	46	TI	Isl 46-5	419852.9	6166707.7	1067		0		no	
NN364	46	TI	Isl 46-5	419850.6	6166711.3	1067		0		no	
NN365	46	TI	Isl 46-5	419851.9	6166714.3	1068		0		no	
NN366	46	TI	Isl 46-5	419847.4	6166708.7	1066		0		no	
NN367	46	TI	Isl 46-5	419846.1	6166710.2	1066		0		no	
NN368	46	TI	Isl 46-5	419864.2	6166731.7	1069		0		no	
NN369	46	TI	Isl 46-5	419868.3	6166737.2	1072		0		no	
NN370	46	TI	Isl 46-5	419870.2	6166735.9	1072		0		no	
NN371	46	TI	Isl 46-5	419876.3	6166741.2	1074		0		no	
NN372	46	TI	Isl 46-5	419879.0	6166746.9	1075		0		no	
NN373	46	CT		420481.3	6166014.7	1078	balsam	20	broken	no	
NN374	46	CT		420539.4	6165845.0	1053	pine	13	broken	no	
NN375	46	SB		420221.0	6165951.8	1019	balsam	26	cut	no	
NN376	46	SB		420195.7	6166033.0	1032		0	broken	no	delete (<15cm)
NN378	46	TI	Isl 46-4	419664.2	6166691.6	1065		0		no	
NN379	46	TI	Isl 46-4	419664.6	6166692.6	1065		0		no	
NN380	46	TI	Isl 46-4	419673.5	6166693.1	1060		0		no	
NN381	46	TI	Isl 46-4	419672.4	6166691.5	1060		0		no	
NN382	46	TI	Isl 46-4	419672.1	6166689.9	1056		0		no	
NN383	46	TI	Isl 46-4	419678.8	6166692.3	1056		0		no	
NN384	46	TI	Isl 46-4	419682.6	6166691.0	1057		0		no	
NN385	46	TI	Isl 46-4	419691.1	6166686.6	1055		0		no	
NN386	46	TI	Isl 46-4	419691.1	6166685.6	1055		0		no	
NN387	46	TI	Isl 46-4	419694.5	6166680.4	1059		0		no	
NN388	46	TI	Isl 46-4	419694.8	6166679.7	1059		0		no	
NN389	46	TI	Isl 46-4	419698.7	6166675.8	1056		0		no	
NN390	46	TI	Isl 46-4	419699.1	6166677.2	1056		0		no	
NN391	46	TI	Isl 46-4	419703.6	6166675.5	1054		0		no	
NN392	46	TI	Isl 46-4	419704.6	6166672.4	1053		0		no	
NN393	46	TI	Isl 46-4	419704.5	6166670.2	1053		0		no	
NN394	46	TI	Isl 46-4	419709.5	6166671.2	1052		0		no	
NN395	46	TI	Isl 46-4	419709.3	6166673.5	1052		0		no	
NN396	46	TI	Isl 46-4	419720.5	6166668.4	1051		0		no	
NN397	46	TI	Isl 46-4	419722.6	6166663.0	1048		0		no	
NN398	46	TI	Isl 46-4	419720.7	6166659.2	1047		0		no	
NN399	46	TI	Isl 46-4	419721.6	6166657.6	1047		0		no	
NN400	46	TI	Isl 46-4	419716.3	6166648.5	1050		0		no	
NN401	46	TI	Isl 46-4	419716.3	6166644.0	1049		0		no	
NN402	46	TI	Isl 46-4	419708.8	6166641.7	1047		0		no	
NN403	46	TI	Isl 46-4	419707.2	6166639.9	1047		0		no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
NN404	46	TI	Isl 46-4	419706.2	6166637.4	1047		0		no	
NN405	46	TI	Isl 46-4	419702.9	6166632.2	1048		0		no	
NN406	46	TI	Isl 46-4	419702.7	6166634.6	1048		0		no	
NN407	46	TI	Isl 46-4	419700.4	6166633.7	1049		0		no	
NN408	46	TI	Isl 46-4	419698.6	6166630.7	1049		0		no	
NN409	46	TI	Isl 46-4	419697.5	6166632.2	1049		0		no	
NN410	46	TI	Isl 46-4	419696.4	6166630.1	1049		0		no	
NN411	46	TI	Isl 46-4	419694.2	6166636.9	1049		0		no	
NN412	46	TI	Isl 46-4	419694.3	6166638.6	1049		0		no	
NN413	46	TI	Isl 46-4	419693.2	6166636.7	1049		0		no	
NN414	46	TI	Isl 46-4	419691.2	6166640.4	1054		0		no	
NN415	46	TI	Isl 46-4	419689.5	6166638.6	1050		0		no	
NN416	46	TI	Isl 46-4	419689.7	6166636.4	1046		0		no	
NN417	46	TI	Isl 46-4	419680.3	6166642.0	1046		0		no	
NN418	46	TI	Isl 46-4	419677.6	6166643.9	1049		0		no	
NN419	46	TI	Isl 46-4	419674.5	6166647.3	1050		0		no	
NN420	46	TI	Isl 46-4	419667.4	6166650.5	1051		0		no	
NN421	46	TI	Isl 46-4	419661.4	6166655.8	1051		0		no	
NN422	46	TI	Isl 46-4	419659.5	6166656.4	1053		0		no	
NN423	46	TI	Isl 46-4	419655.6	6166658.1	1054		0		no	
NN424	46	TI	Isl 46-4	419653.3	6166659.1	1055		0		no	
NN425	46	TI	Isl 46-4	419652.7	6166662.1	1055		0		no	
NN426	46	TI	Isl 46-4	419649.2	6166662.2	1054		0		no	
NN427	46	TI	Isl 46-4	419649.9	6166663.7	1054		0		no	
NN428	46	TI	Isl 46-4	419650.6	6166671.5	1048		0		no	
NN429	46	TI	Isl 46-4	419657.6	6166676.7	1048		0		no	
NN430	46	TI	Isl 46-4	419662.1	6166682.8	1049		0		no	
NN431	46	TI	Isl 46-4	419657.0	6166683.4	1064		0		no	
NN432	46	TI	Isl 46-6	420067.4	6166558.4	1057		0		no	
NN433	46	TI	Isl 46-6	420076.4	6166555.4	1055		0		no	
NN434	46	TI	Isl 46-6	420077.5	6166553.2	1055		0		no	
NN435	46	TI	Isl 46-6	420081.6	6166550.6	1059		0		no	
NN436	46	TI	Isl 46-6	420082.1	6166552.5	1059		0		no	
NN437	46	TI	Isl 46-6	420087.4	6166557.8	1070		0		no	
NN438	46	TI	Isl 46-6	420088.7	6166559.4	1070		0		no	
NN439	46	TI	Isl 46-6	420106.7	6166568.4	1082		0		no	
NN440	46	TI	Isl 46-6	420106.9	6166566.4	1082		0		no	
NN441	46	TI	Isl 46-6	420103.1	6166553.1	1067		0		no	
NN442	46	TI	Isl 46-6	420110.6	6166555.0	1073		0		no	
NN443	46	TI	Isl 46-6	420112.5	6166556.2	1074		0		no	
NN444	46	TI	Isl 46-6	420118.5	6166553.6	1070		0		no	
NN445	46	TI	Isl 46-6	420117.9	6166549.4	1066		0		no	
NN446	46	TI	Isl 46-6	420116.2	6166547.6	1066		0		no	
NN447	46	TI	Isl 46-6	420118.2	6166546.8	1064		0		no	
NN448	46	TI	Isl 46-6	420122.3	6166548.3	1065		0		no	
NN449	46	TI	Isl 46-6	420121.7	6166543.4	1063		0		no	
NN450	46	TI	Isl 46-6	420124.2	6166532.9	1064		0		no	
NN451	46	TI	Isl 46-6	420120.8	6166525.0	1064		0		no	

Tag	Block	Unit	Island	Easting	Northing	Elev.	Species	DBH	Cut?	1-in-5	Comments
NN452	46	TI	Isl 46-6	420118.9	6166521.2	1065		0		no	
NN453	46	TI	Isl 46-6	420113.7	6166518.6	1065		0		no	
NN454	46	TI	Isl 46-6	420109.5	6166515.4	1060		0		no	
NN455	46	TI	Isl 46-6	420111.2	6166514.4	1060		0		no	
NN456	46	TI	Isl 46-6	420108.5	6166508.4	1060		0		no	
NN457	46	TI	Isl 46-6	420099.2	6166503.9	1057		0		no	
NN458	46	TI	Isl 46-6	420096.3	6166501.5	1055		0		no	
NN459	46	TI	Isl 46-6	420094.2	6166501.2	1059		0		no	
NN460	46	TI	Isl 46-6	420086.5	6166506.8	1057		0		no	
NN461	46	TI	Isl 46-6	420082.7	6166510.6	1057		0		no	
NN462	46	TI	Isl 46-6	420069.3	6166514.8	1055		0		no	
NN463	46	TI	Isl 46-6	420063.1	6166532.5	1059		0		no	
NN464	46	TI	Isl 46-6	420064.5	6166537.9	1058		0		no	
NN465	46	TI	Isl 46-6	420067.0	6166547.0	1059		0		no	
NN466	46	TI	Isl 46-6	420067.6	6166548.5	1059		0		no	
NN467	46	TI	Isl 46-6	420067.2	6166553.9	1058		0		no	
NN468	46	TI	Isl 46-6	420120.6	6166553.2	1074		0		no	
NN469	47	TI	Isl 47-4	418894.7	6167619.6	1091		0		no	
NN470	47	SB		418359.4	6166942.1	1013	spruce	22	cut	no	
NN471	49	CC		415748.3	6169643.5	1167	balsam	45	?	no	49NP02
NN473	46	SI		419893.6	6166308.9	1021	spruce	27	cut	no	
NN475	16	SI	Isl 16-5	423591.1	6164303.0	1327	pine	24		no	
NN476	16	SI	Isl 16-5	423603.0	6164338.0	1331	balsam	13		no	
NN477	16	SI		423607.7	6164187.0	1330	balsam	43	broken	no	
NN478	16	SI		423426.4	6164191.0	1291	spruce	47	broken	no	
NN479	16	SI		423211.8	6164172.9	1240	balsam	48	broken	no	
NN480	16	SI	Isl 16-4	423251.5	6164245.6	1255	balsam	19	broken	no	
NN481	16	SI	Isl 16-4	423208.3	6164296.9	1241	spruce	26	cut	no	
NN482	16	SB		423173.2	6163920.0	1224	balsam	18	broken	no	
NN483	16	TI	Isl 16-7	423493.6	6163977.1	1298		0		no	
NN484	16	TI		423672.9	6163904.9	1307	balsam	35	cut	no	
NN485	16	TI	Isl 16-8	423621.8	6163971.2	1314	pine	38	cut	no	
NN487	46	SB		419999.7	6165949.8	1004		0		no	delete (<15cm)
NN488	46	SB		419999.0	6165949.0	1004		0		no	delete (<15cm)
NN489	46	SB		419868.7	6165764.8	982	spruce	44	broken	no	
NN490	16	SB		422908.3	6163760.8	1127	balsam	40	cut	no	

Appendix C. Characteristics and status in 1992 and 1996 of trees and snags in 4 tree islands (Isl 47-1, 4, 6 and 8) in Block 5547, Donna Creek Forestry/Biodiversity Project, 1992-1996: Tag number, Tree-island number, Species, Diameter at breast-height (DBH in cm), Height (m), Estimated Wildlife Tree Class (WTC) in 1992 and 1996, Status of the stem in 1992 (tree for live trees, snag for standing dead trees), and status in 1996 upon re-inspection.

Tag	Island	Species	DBH	Ht	WTC 1992	Type Stem 1992	WTC 1996	Status in 1996	Comments
520	Isl47-6	balsam	23.0	14.9	1	tree		standing	
521	Isl47-6	balsam	16.5	11.1	1	tree		not found	
522	Isl47-6	balsam	18.0	9.6	1	tree		standing	
523	Isl47-6	spruce	67.5	32.6	1	tree		standing	
524	Isl47-6	pine	26.0	21.4	1	tree		standing	
525	Isl47-6	balsam	25.5	17.1	1	tree		standing	
526	Isl47-6	spruce	61.0	39.0	1	tree		standing	
527	Isl47-6	spruce	52.0	25.3	1	tree		standing	
528	Isl47-6	pine	29.0	33.8	1	tree		standing	
529	Isl47-6	pine	24.0	24.4	1	tree		standing	
530	Isl47-6	balsam	21.0	14.9	1	tree		standing	
531	Isl47-6	balsam	34.0	29.1	1	tree		standing	
532	Isl47-6	balsam	35.0	27.6	1	tree		standing	
533	Isl47-6	balsam	32.0	27.8	1	tree		standing	
534	Isl47-6	balsam	38.0	28.4	1	tree		standing	
535	Isl47-6	balsam	19.0	9.4	1	tree		standing	
536	Isl47-6	balsam	47.0	12.8	4	snag		standing	
537	Isl47-6	balsam	18.5	13.1	1	tree		standing	
538	Isl47-6	balsam	25.0	16.7	1	tree		standing	
539	Isl47-6	spruce	42.0	29.9	1	tree		standing	
540	Isl47-6	spruce	29.5	7.9	5	snag		standing	
541	Isl47-6	balsam	18.0	14.7	1	tree		standing	
542	Isl47-6	balsam	40.0	13.6	5	snag		standing	
543	Isl47-6	spruce	64.0	29.0	1	tree		standing	
544	Isl47-6	spruce	33.0	13.1	1	tree		standing	
545	Isl47-6	spruce	16.5	9.9	2	tree		standing	
546	Isl47-6	spruce	59.5	48.2	1	tree		standing	
547	Isl47-6	balsam	46.0	26.0	5	snag		fallen	
548	Isl47-6	spruce	44.0	37.4	1	tree		fallen	
549	Isl47-6	balsam	17.0	11.6	1	tree		standing	
550	Isl47-6	spruce	16.0	7.4	1	tree		standing	
551	Isl47-6	balsam	15.5	13.8	1	tree		standing	
552	Isl47-6	balsam	19.5	18.1	1	tree		standing	
553	Isl47-6	balsam	18.5	18.1	1	tree		standing	
554	Isl47-6	balsam	22.0	21.6	1	tree		fallen	
555	Isl47-6	pine	26.0	22.7	1	tree		not found	

Tag	Island	Species	DBH	Ht	WTC 1992	Type Stem 1992	WTC 1996	Status in 1996	Comments
556	Isl47-6	balsam	18.0	11.6	2	tree	3	broken off	1996: id'd as 'stub' by GPS crew
557	Isl47-6	spruce	52.0	33.9	1	tree		standing	
558	Isl47-6	balsam	23.0	26.1	1	tree		standing	
559	Isl47-6	pine	33.5	26.0	3	snag		standing	
560	Isl47-6	pine	20.0	20.4	1	tree		not found	
561	Isl47-6	balsam	44.0	32.5	1	tree		standing	
562	Isl47-6	pine	34.0	28.7	1	tree		standing	
563	Isl47-6	pine	25.5	13.1	4	snag		not found	
564	Isl47-6	balsam	37.5	28.3	4	snag		standing	
565	Isl47-6	spruce	44.0	33.8	1	tree		standing	
566	Isl47-6	balsam	16.0	12.5	1	tree		standing	
567	Isl47-6	balsam	46.0	25.5	5	snag		standing	
568	Isl47-6	balsam	36.5	27.8	1	tree		standing	
569	Isl47-6	spruce	49.0	34.9	1	tree		fallen	
570	Isl47-6	balsam	25.0	20.9	4	snag		not found	
571	Isl47-6	balsam	30.5	16.0	1	tree		standing	
572	Isl47-6	spruce	32.0	23.3	1	tree		standing	
573	Isl47-6	balsam	21.0	12.1	1	tree		standing	
574	Isl47-6	spruce	32.0	4.0	4	snag		not found	
575	Isl47-6	spruce	43.0	29.5	1	tree		fallen	
576	Isl47-6	spruce	50.0	33.2	1	tree		fallen	
577	Isl47-6	balsam	20.0	14.2	1	tree		standing	
578	Isl47-6	balsam	20.5	12.1	1	tree		not found	
579	Isl47-6	spruce	50.0	34.6	1	tree		standing	
580	Isl47-6	spruce	56.0	40.3	1	tree		standing	
581	Isl47-6	spruce	62.0	36.0	2	tree		standing	
582	Isl47-6	balsam	32.0	20.6	2	tree		standing	
583	Isl47-6	balsam	30.0	23.3	4	snag		fallen	
584	Isl47-6	spruce	48.0	29.5	1	tree		fallen	
585	Isl47-6	pine	21.0	12.8	1	tree		not found	
586	Isl47-6	balsam	19.0	15.8	1	tree		fallen	
587	Isl47-6	pine	33.0	30.8	1	tree		fallen	
588	Isl47-6	balsam	20.0	15.7	1	tree		not found	
589	Isl47-6	spruce	44.0	34.0	1	tree		standing	
590	Isl47-6	pine	32.5	30.8	1	tree		standing	
591	Isl47-6	pine	30.5	24.3	1	tree		fallen	
592	Isl47-6	spruce	18.0	13.3	1	tree		standing	
593	Isl47-6	pine	27.5	25.0	1	tree		fallen	
594	Isl47-6	pine	33.5	22.2	1	tree		standing	
595	Isl47-6	balsam	19.5	12.5	1	tree		standing	
596	Isl47-6	spruce	21.5	12.3	2	tree		standing	
597	Isl47-6	pine	21.5	14.8	4	snag		standing	
598	Isl47-6	balsam	22.5	13.1	1	tree		standing	
599	Isl47-6	balsam	27.0	18.9	1	tree		standing	

Tag	Island	Species	DBH	Ht	WTC 1992	Type Stem 1992	WTC 1996	Status in 1996	Comments
600	Isl47-6	balsam	24.0	12.7	1	tree		standing	
601	Isl47-6	balsam	30.0	24.6	1	tree		standing	
602	Isl47-6	spruce	44.5	34.2	3	snag		standing	
603	Isl47-6	balsam	21.0	12.6	1	tree		standing	
604	Isl47-6	balsam	16.5	16.1	1	tree		standing	
605	Isl47-6	spruce	55.0	35.0	1	tree		fallen	
606	Isl47-6	balsam	20.0	9.1	1	tree		standing	
607	Isl47-6	balsam	26.0	20.3	1	tree		standing	
608	Isl47-6	balsam	29.0	18.3	1	tree		standing	
609	Isl47-6	pine	38.0	30.3	1	tree		standing	
610	Isl47-6	spruce	36.0	26.8	1	tree		standing	
611	Isl47-6	spruce	52.0	33.8	1	tree		standing	
612	Isl47-6	spruce	18.0	13.3	1	tree		standing	
613	Isl47-6	balsam	25.5	23.9	4	snag		fallen	
614	Isl47-6	pine	41.0	27.5	1	tree		fallen	
615	Isl47-6	balsam	18.0	8.8	1	tree		standing	
616	Isl47-6	balsam	30.0	27.7	4	snag		not found	
617	Isl47-6	pine	36.0	28.4	1	tree		standing	
618	Isl47-6	spruce	33.5	28.9	1	tree		not found	
619	Isl47-6	balsam	25.0	19.6	1	tree		not found	
620	Isl47-6	balsam	25.0	14.6	5	snag		standing	
621	Isl47-6	pine	39.0	31.0	1	tree		standing	
622	Isl47-6	pine	20.0	9.6	3	snag		standing	
623	Isl47-6	spruce	21.5	15.2	1	tree		not found	
624	Isl47-1	balsam	27.0	19.1	1	tree		not found	
625	Isl47-1	balsam	42.0	24.9	2	tree		standing	
626	Isl47-1	balsam	34.0	20.8	1	tree		not found	
627	Isl47-1	balsam	22.5	16.6	1	tree		fallen	
628	Isl47-1	balsam	22.0	16.1	1	tree		standing	
629	Isl47-1	balsam	39.0	8.6	3	snag		standing	
630	Isl47-1	balsam	25.5	16.2	1	tree		standing	
631	Isl47-1	balsam	54.0	35.3	1	tree	3	broken off	1996: short snag see 47NP07
632	Isl47-1	spruce	56.5	34.0	1	tree		standing	
633	Isl47-1	balsam	32.0	26.5	1	tree		standing	
634	Isl47-1	spruce	67.0	39.4	1	tree		standing	
635	Isl47-1	balsam	21.0	15.9	1	tree		standing	
636	Isl47-1	spruce	45.5	26.8	2	tree		standing	
637	Isl47-1	balsam	23.0	10.1	1	tree		standing	
638	Isl47-1	balsam	24.0	17.6	4	snag		not found	
639	Isl47-1	balsam	29.0	19.2	4	snag		standing	
640	Isl47-1	spruce	39.0	6.4	3	snag		standing	
641	Isl47-1	spruce	32.0	5.9	4	snag		standing	
642	Isl47-1	balsam	41.5	27.2	1	tree		not found	
643	Isl47-1	spruce	43.0	36.3	1	tree		not found	

Tag	Island	Species	DBH	Ht	WTC 1992	Type Stem 1992	WTC 1996	Status in 1996	Comments
644	Isl47-1	balsam	51.5	24.7	4	snag		not found	
645	Isl47-1	balsam	19.0	15.3	1	tree		not found	
646	Isl47-1	balsam	22.5	15.6	1	tree		not found	
647	Isl47-1	spruce	42.0	33.5	1	tree		not found	
648	Isl47-1	spruce	39.5	32.7	1	tree		not found	
649	Isl47-1	balsam	46.0	25.1	1	tree		not found	
650	Isl47-1	balsam	33.0	25.5	5	snag		not found	
651	Isl47-1	balsam	50.0	32.4	4	snag		fallen	
652	Isl47-1	spruce	54.0	33.4	1	tree		not found	
653	Isl47-1	balsam	46.0	30.4	4	snag		not found	
654	Isl47-1	balsam	27.0	3.7	5	snag		standing	
655	Isl47-1	spruce	46.5	36.6	1	tree		not found	
656	Isl47-1	balsam	17.5	12.9	1	tree		standing	
657	Isl47-1	balsam	31.0	21.0	1	tree		fallen	
658	Isl47-1	spruce	48.5	34.6	1	tree		not found	
659	Isl47-1	spruce	46.0	35.2	1	tree		not found	
660	Isl47-1	balsam	28.0	12.0	1	tree		standing	
661	Isl47-1	spruce	32.5	26.1	1	tree		not found	
662	Isl47-1	spruce	64.0	30.5	1	tree	3	broken off	1996: dead, see 47NP07
663	Isl47-1	balsam	17.5	10.8	1	tree		standing	
664	Isl47-1	spruce	33.5	15.9	2	tree		not found	
665	Isl47-1	balsam	42.0	28.1	1	tree		standing	
666	Isl47-1	spruce	33.5	23.2	1	tree		standing	
667	Isl47-1	balsam	44.0	30.8	2?	tree	3	broken off	1992: WTC NR 1996: ht 5-10 m
668	Isl47-1	spruce	65.0	37.9	1	tree		standing	
669	Isl47-1	balsam	36.5	26.3	1	tree		not found	
670	Isl47-4	balsam	23.0	11.9	1	tree		standing	
671	Isl47-4	spruce	62.5	35.7	1	tree		not found	
672	Isl47-4	balsam	43.0	32.5	1	tree		standing	
673	Isl47-4	spruce	32.0	19.6	1	tree		standing	
674	Isl47-4	balsam	21.0	12.7	1	tree		standing	
675	Isl47-4	balsam	29.0	17.6	1	tree		standing	
676	Isl47-4	balsam	45.0	5.6	3	snag		standing	
677	Isl47-4	balsam	18.0	12.3	1	tree		standing	
678	Isl47-4	spruce	23.5	8.9	3	snag		standing	
679	Isl47-4	balsam	20.0	13.2	1	tree		standing	
680	Isl47-4	balsam	17.0	9.4	1	tree		standing	
681	Isl47-4	balsam	44.0	29.0	1	tree		standing	
682	Isl47-4	balsam	19.0	8.7	1	tree		standing	
683	Isl47-4	balsam	37.0	16.7	1	tree		standing	
684	Isl47-4	balsam	36.0	7.1	2	tree		standing	
685	Isl47-4	balsam	40.0	6.4	2	tree		standing	
686	Isl47-4	balsam	23.0	15.1	1	tree		standing	
687	Isl47-4	spruce	48.0	30.8	1	tree		fallen	

Tag	Island	Species	DBH	Ht	WTC 1992	Type Stem 1992	WTC 1996	Status in 1996	Comments
688	Isl47-4	balsam	26.0	16.6	1	tree		standing	
689	Isl47-4	spruce	48.0	32.2	1	tree		not found	
690	Isl47-4	balsam	22.5	14.7	1	tree		standing	
691	Isl47-4	spruce	52.0	32.5	1	tree		fallen	
692	Isl47-4	balsam	80.0	40.8	1	tree		fallen	
693	Isl47-4	balsam	16.5	9.3	1	tree		standing	
694	Isl47-4	balsam	23.0	14.5	1	tree		standing	
695	Isl47-4	balsam	17.5	11.8	1	tree		standing	
696	Isl47-4	spruce	18.0	11.3	1	tree		standing	
697	Isl47-4	balsam	43.0	28.7	1	tree		fallen	
698	Isl47-4	spruce	78.0	34.8	1	tree		standing	
699	Isl47-4	balsam	19.0	9.5	1	tree		standing	
700	Isl47-4	spruce	16.5	5.7	2	tree		not found	
701	Isl47-4	balsam	24.0	11.3	1	tree		not found	
702	Isl47-4	balsam	36.5	27.8	1	tree		fallen	
703	Isl47-4	balsam	16.0	10.8	1	tree		standing	
830	Isl47-8	balsam	16.0	12.5	1	tree		standing	
831	Isl47-8	balsam	17.5	12.9	1	tree		standing	
832	Isl47-8	balsam	23.5	7.8	1	tree		standing	
833	Isl47-8	balsam	17.5	11.6	1	tree		standing	
834	Isl47-8	balsam	18.5	4.7	3	snag		standing	
835	Isl47-8	balsam	50.0	23.3	4	snag		not found	
836	Isl47-8	spruce	16.0	10.9	1	tree		standing	
837	Isl47-8	spruce	19.0	15.3	1	tree		standing	
838	Isl47-8	balsam	17.5	12.5	1	tree		standing	
839	Isl47-8	balsam	15.0	8.7	1	tree		standing	
840	Isl47-8	balsam	34.0	23.9	3	snag		standing	
841	Isl47-8	spruce	32.0	23.4	1	tree		standing	
842	Isl47-8	spruce	31.0	28.8	1	tree		standing	
843	Isl47-8	balsam	34.5	26.2	1	tree		standing	
844	Isl47-8	balsam	19.0	12.2	1	tree		standing	
845	Isl47-8	balsam	17.5	13.8	1	tree		standing	
846	Isl47-8	balsam	15.5	14.1	1	tree		standing	
847	Isl47-8	spruce	18.0	12.9	1	tree		standing	
848	Isl47-8	balsam	27.5	20.8	1	tree		standing	
849	Isl47-8	balsam	17.5	13.2	1	tree		standing	
850	Isl47-8	balsam	19.0	13.7	1	tree		standing	
851	Isl47-8	balsam	20.0	15.2	1	tree		standing	
852	Isl47-8	balsam	32.0	8.1	5	snag		standing	
853	Isl47-8	balsam	18.0	12.1	1	tree		standing	
854	Isl47-8	balsam	16.5	7.2	1	tree		standing	
855	Isl47-8	spruce	43.5	33.4	1	tree		standing	
856	Isl47-8	spruce	70.0	36.9	1	tree		fallen	
857	Isl47-8	spruce	25.0	15.0	2	tree		not found	

Tag	Island	Species	DBH	Ht	WTC 1992	Type Stem 1992	WTC 1996	Status in 1996	Comments
858	Isl47-8	spruce	26.0	17.0	4	snag		not found	
859	Isl47-8	balsam	21.5	10.4	1	tree		standing	
860	Isl47-8	balsam	21.0	13.7	1	tree		standing	
861	Isl47-8	balsam	27.5	16.3	1	tree		standing	
862	Isl47-8	balsam	23.0	17.0	1	tree		standing	
863	Isl47-8	spruce	43.5	29.2	1	tree		fallen	
864	Isl47-8	balsam	25.0	13.6	1	tree		standing	
865	Isl47-8	balsam	20.5	11.8	1	tree		standing	
866	Isl47-8	balsam	29.0	18.2	1	tree		fallen	
867	Isl47-8	balsam	21.0	17.3	1	tree		standing	
868	Isl47-8	spruce	17.5	13.4	1	tree		not found	
869	Isl47-8	balsam	38.5	30.7	1	tree		not found	
870	Isl47-8	spruce	53.0	38.4	1	tree		standing	
871	Isl47-8	balsam	60.0	36.1	1	tree		standing	
872	Isl47-8	spruce	17.5	13.0	2	tree		standing	
873	Isl47-8	balsam	43.0	25.6	1	tree		fallen	
874	Isl47-8	balsam	53.5	33.3	1	tree		not found	
875	Isl47-8	balsam	17.5	18.2	5	snag		standing	
876	Isl47-8	balsam	32.5	26.4	4	snag		standing	
877	Isl47-8	spruce	59.5	35.5	1	tree		fallen	
878	Isl47-8	spruce	52.0	37.7	1	tree		standing	
879	Isl47-8	spruce	36.0	19.0	1	tree		standing	
880	Isl47-8	pine	31.0	25.0	1	tree		standing	
881	Isl47-8	balsam	29.0	26.6	1	tree		standing	
882	Isl47-8	spruce	44.0	20.4	1	tree		standing	
883	Isl47-8	balsam	30.0	22.3	1	tree		standing	
884	Isl47-8	spruce	26.0	18.6	1	tree		not found	
885	Isl47-8	balsam	27.0	14.5	1	tree		standing	
886	Isl47-8	spruce	21.0	18.7	1	tree		fallen	
887	Isl47-8	balsam	29.5	19.8	1	tree		standing	
888	Isl47-8	spruce	62.0	30.1	1	tree		not found	
889	Isl47-8	spruce	17.5	13.4	1	tree		not found	
890	Isl47-8	balsam	54.5	24.0	1	tree		not found	
891	Isl47-8	spruce	16.0	17.8	1	tree		not found	
892	Isl47-8	balsam	18.5	10.0	1	tree		standing	
893	Isl47-8	balsam	19.5	8.6	1	tree		standing	
894	Isl47-8	balsam	21.5	12.6	1	tree		standing	
895	Isl47-8	balsam	21.0	15.3	1	tree		standing	
896	Isl47-8	balsam	17.0	11.3	1	tree		standing	
897	Isl47-8	spruce	18.0	6.0	1	tree		standing	
898	Isl47-8	spruce	31.0	7.7	4	snag		not found	
899	Isl47-8	balsam	29.5	26.0	1	tree		standing	

Tag	Island	Species	DBH	Ht	WTC 1992	Type Stem 1992	WTC 1996	Status in 1996	Comments
900	Isl47-8	balsam	45.0	29.4	1	tree		standing	
901	Isl47-8	spruce	36.5	30.5	1	tree		standing	
902	Isl47-8	balsam	20.0	14.6	1	tree		standing	
903	Isl47-8	spruce	20.0	20.3	1	tree		standing	
904	Isl47-8	spruce	31.0	20.3	1	tree		standing	
905	Isl47-8	spruce	33.0	26.9	1	tree		standing	
906	Isl47-8	balsam	22.5	19.3	1	tree		standing	
907	Isl47-8	balsam	15.5	9.1	1	tree		standing	

Appendix D. Location and characteristics of mature cottonwood trees within harvested areas of the Donna Creek study area, Donna Creek Forestry/Biodiversity Project, 1996: GIS ID number, Block, Unit, Tag number (if tagged in 1992), Diameter at breast-height (DBH in cm), Height (m), Estimated Wildlife Tree Class (WTC, if available), UTM co-ordinates (Zone 10, in m), and Elevation (m). Cottonwood trees were only present in Block 5547.

GIS ID Num	Block	Unit	Tag	DBH	Ht.	WTC	Easting	Northing	Elev.
Ct01	5547	SB	26	59.0	29.2	1	418577	6167141	1014
Ct02	5547	SB	27	46.5	25.3	1	418609	6167133	1013
Ct03	5547	SB	18	57.0	34.4	1	418618	6167081	1016
Ct04	5547	SB	19	43.0	34.4	1	418619	6167078	1015
Ct05	5547	SB	17	39.0	19.0	1	418642	6167086	1013
Ct06	5547	SB	16	68.0	18.3	1	418642	6167077	1012
Ct07	5547	SB	2	35.0	20.6	1	418678	6167052	1011
Ct08	5547	SB	3	47.0	21.3	1	418688	6167045	1011
Ct09	5547	CC	4	48.5	29.2	1	418699	6167024	1011
Ct10	5547	CC					418766	6166985	1006
Ct11	5547	CC					418770	6166968	1006
Ct12	5547	CC					418842	6166910	1009
Ct13	5547	CC					418854	6166875	995
Ct14	5547	CC					418859	6166870	1004
Ct15	5547	CC					418866	6166877	999
Ct16	5547	CC					418869	6166869	1004
Ct17	5547	CC					418916	6166846	999
Ct18	5547	CC					418453	6166672	1005
Ct19	5547	SB	55	79.0	19.0	1	418318	6166746	1008
Ct20	5547	SB					418265	6166871	1011
Ct21	5547	SB					418266	6166872	1011
Ct22	5547	SB	96	79.0	59.9	1	418247	6166925	1014

Appendix E. Locations of patches of regenerating conifers and/or alders that were left after timber harvest within harvested areas of the Donna Creek study area, Donna Creek Forestry/Biodiversity Project, 1996: GIS ID number, Block, Unit, Location comments, UTM co-ordinates (Zone 10, in m), and Elevation (m).

GIS ID Num	Block	Unit	Comments	Easting	Northing	Elev.
REGEN01	5547	SB	along creek	418559	6167184	1015
REGEN02	5547	SB	along creek	418602	6167117	1013
REGEN03	5547	SB	along creek; nr stub #15	418656	6167067	1011
REGEN04	5547	SB	along creek	418741	6167008	1008
REGEN05	5547	SI	E of stub #725	419168	6167325	1077
REGEN06	5547	SI	nr stub #480 & #481	419199	6167391	1104
REGEN07	5547	SI	betw stub #409 & #410	419359	6167372	1122
REGEN08	5547	SI	W of stub #430	419440	6167378	1125
REGEN09	5547	SI	beside stub #342 & #343	419363	6167587	1142
REGEN10	5547	SI	betw stub #391 & #392	419531	6167579	1180
REGEN11	5546	SI	approx. elev.; W of stub #	419720	6166382	1014
REGEN12	5516	TI	betw Isl 16-7 & 16-8	423589	6163918	1300
REGEN13	5516	CC	approx. elev.; W of stub N	423989	6163678	1300
REGEN14	5516	CC	approx. elev.; W of stub N	423969	6163661	1300
REGEN15	5516	CC	approx. elev.; W of stub N	424036	6163613	1300

Appendix F. Characteristics of standing non-merchantable coniferous trees in Block 5547, Donna Creek Forestry/Biodiversity Project, 1992: Tag numbers, Block, Unit, Tree species, Diameter at breast-height (DBH in cm), Height (m), Estimated Wildlife Tree Class (WTC), and Whether the stem was living (tree) or dead (snag). Exact locations are not provided since these were not GPS-traversed in 1996.

Tag	Block	Unit	Tree Species	DBH	Ht.	WTC 1992	Type of Stem 1992	Comments
10	47	SB	balsam	16.0	4.5	2	tree	
44	47	SB	balsam	16.5	7.5	2	tree	
50	47	SB	balsam	16.0	5.0	2	tree	
53	47	SB	balsam	15.0	5.9	2	tree	
75	47	SB	spruce	16.0	8.1	2	tree	
100	47	SB	balsam	15.5	8.0	1	tree	
102	47	SB	spruce	16.5	5.0	3	snag	standing dead regen
164	47	SB	balsam	15.0	9.8	2	tree	
176	48	SB	balsam	17.5	13.3	1	tree	
195	47	SB	balsam	16.0	11.6	1	tree	
199	47	SB	balsam	15.0	11.6	1	tree	
205	47	SB	balsam	15.0	9.2	2	tree	
222	47	SB	balsam	15.5	6.8	2	tree	
223	47	SB	spruce	16.0	5.0	2	tree	
371	47	SI	balsam	15.5	10.0	1	tree	
408	47	SI	balsam	15.5	6.6	2	tree	
411	47	SI	balsam	16.0	7.7	2	tree	
412	47	SI	balsam	16.0	11.6	1	tree	
479	47	SI	spruce	15.0	6.2	1	tree	
712	47	SI	spruce	17.0	5.0	2	tree	
719	47	SI	balsam	19.0	16.7	1	tree	
722	47	SI	balsam	19.0	10.1	1	tree	
726	47	SI	balsam	18.0	7.0	2	tree	
727	47	SI	balsam	16.5	7.8	1	tree	
728	47	SI	balsam	15.5	10.2	1	tree	
729	47	SI	balsam	17.5	8.9	1	tree	
732	48	SI	balsam	19.0	19.4	1	tree	
736	47	SI	balsam	15.0	11.2	1	tree	
742	47	SI	balsam	15.5	4.0	2	tree	regen w/ broken top
744	47	SI	balsam	19.0	14.5	1	tree	
751	47	SI	balsam	16.5	6.0	2	tree	regen w/2 broken leaders
786	47	SI	balsam	19.0	13.4	1	tree	

Appendix G. Characteristics of the 20% (1-in-5) decay-assessed stub sample in the **SB** and **SI** units of Blocks 5516, 5546 and 5547, Donna Creek Forestry/Biodiversity Project, 1996: Tag number, Block, Unit, Tree species, Diameter at breast-height (DBH in cm), Estimated Wildlife Tree Class (WTC), % bark remaining, Root decay condition, Heartwood (HW) decay condition, Sapwood (SW) decay condition, Whether any woodpecker feeding sign was seen (Yes or none recorded [NR]), Whether there were any cavity nests in the stub (keyed to Cavity Nest Plot Number, if an active nest), and Tree defects. Locations of these stubs are in Appendix B.

Tag	Block	Unit	Species	DBH	WTC	% bark	Root	HW	SW	Woodp. Feeding	Cavity Nests	Tree Defects
8	47	SB	balsam	38	4	<50	2	2	1	Yes	47NP06	conks, butt rot, cracks
14	47	SB	balsam	47	3	<50	3	2	1	Yes		cracks, FB scar
22	47	SB	spruce	40	4	50-75	2	2	2	NR		canker, cracks
24	47	SB	balsam	49	3	>75	1	1	1	Yes		cracks, possible canker, scars
30	47	SB	spruce	33	3	>75	1	2	1	NR		cracks, some butt rot, leaning
35	47	SB	spruce	69	4	50-75	D	2	1	NR		cracks, butt rot, broken top
42	47	SB	spruce	28	6	>75	2.5	3	3	NR		cracks, butt rot
51	47	SB	balsam	32	3	>75	2	1	1	Yes		FB scar at base
61	47	SB	pine	45	4	<50	3	1	1	NR		cracks, butt rot, FB scar at top
62	47	SB	pine	39	3	>75	2	2	1	NR		cracks, small scars
72	47	SB	pine	32	3	>75	2	1	1	NR		
77	47	SB	pine	34	3	<50	2	2	1	NR		cracks
81	47	SB	spruce	31	4	<50	3	1	1	NR		
83	47	SB	balsam	30	3	>75	2	2	1	Yes		cracks, scar (beginning of a canker?)
86	47	SB	spruce	37	3	>75	2	2	1	NR		cracks, FB scar
87	47	SB	pine	36	3	>75	1	2	2	NR		cracks
106	47	SB	pine	36	3	>75	2	1	1	Yes		scars
107	47	SB	pine	33	3	50-75	1	1	1	NR		cracks
115	47	SB	pine	29	3	>75	2	2	1	NR		crack
116	47	SB	pine	28	3	<50	2	1	1	NR		cracks, butt rot
120	47	SB	balsam	39	3	50-75	1	1	2	Yes		cracks
123	47	SB	pine	35	3	<50	2	1	1	NR		canker?, cracks
126	47	SB	pine	30	3	<50	2	1	1	NR		cracks
129	47	SB	pine	16	3	>75	2	1	1	NR		crack

Tag	Block	Unit	Species	DBH	WTC	% bark	Root	HW	SW	Woodp. Feeding	Cavity Nests	Tree Defects
134	47	SB	pine	29	3	<50	1	2	1	NR		conks, cracks, scars, butt rot beginning, broken top
140	47	SB	pine	28	3	>75	1	1	1	NR		cracks
145	47	SB	pine	39	3	>75	2	1	1	NR		butt rot, cracks
166	47	SB	spruce	51	3	>75	2	1	1	NR		cracks
170	47	SB	balsam	45	5	<50	3	2	2	NR		
186	47	SB	spruce	46	5	>75	3	2	2	Yes		small FB scar, cracks
194	47	SB	spruce	44	3	>75	1	2	1	Yes		
201	47	SB	spruce	40	3	>75	1	1	1	Yes		cracks
202	47	SB	spruce	38	5	>75	2	3	3	Yes		cracks, FB scars
219	47	SB	balsam	47	3	>75	2	2	1	NR		small scars
221	47	SB	spruce	51	3	>75	1	2	2	NR		
224	47	SB	spruce	50	4	>75	2	2	2	NR		
228	47	SB	spruce	35	3	>75	1	1	1	Yes		cracks
231	47	SB	spruce	51	3	>75	2	1	1	NR		
239	47	SB	balsam	31	3	<50	2	1	1	Yes	possible cavity starts?	cracks
301	47	SI	spruce	57	4	>75	2	2	2	Yes		cracks, major FB scars
306	47	SI	spruce	52	4	>75	2	3	1	Yes		cracks, scars
311	47	SI	balsam	28	4	50-75	2	2	2	Yes		cracks, scars
319	47	SI	spruce	47	4	>75	3	2	1	NR		FB scars
330	47	SI	balsam	22	3	50-75	2	1	1	Yes		
337	47	SI	balsam	15	3	50-75	2	1	1	NR		cracks
341	47	SI	balsam	15	4	>75	3	1	2	Yes		cracks
342	47	SI	spruce	49	4	>75	2	2	2	NR		FB scar at top, other small scars
351	47	SI	balsam	34	3	50-75	2	1	1	Yes		cracks
353	47	SI	spruce	28	5	>75	2	D	3	Yes		cracks
359	47	SI	spruce	20	3	>75	2	1	1	Yes		
364	47	SI	balsam	35	4	50-75	3	1	1	Yes		
375	47	SI	spruce	60	5	<50	3	3	2	NR		cracks
382	47	SI	balsam	29	3	<50	2	1	1	Yes		butt rot, cracks
385	47	SI	pine	26	3	50-75	3	1	1	NR		cracks, FB scar
390	47	SI	balsam	30	5	50-75	2	3	2	Yes		canker, FB scar, cracks, mycelium under bark

Tag	Block	Unit	Species	DBH	WTC	% bark	Root	HW	SW	Woodp. Feeding	Cavity Nests	Tree Defects
392	47	SI	balsam	34	3	<50	1	2	1	Yes	4 cavities: all inactive	butt rot, FB scars, cracks
395	47	SI	pine	41	3	<50	2	1	1	NR		canker, cracks, butt rot, broken roots, broken top
406	47	SI	spruce	59	3	>75	2	1	2	NR		FB scar, natural scar
409	47	SI	spruce	41	3	<50	2	1	1	Yes		cracks, extensive butt rot, broken root
413	47	SI	spruce	51	3	>75	2	1	1	Yes		cracks
417	47	SI	balsam	40	4	>75	3	2	1	Yes		cracks, scars, FB scars
421	47	SI	spruce	31	4	>75	2	2	1	NR		natural scar
427	47	SI	spruce	44	3	50-75	1	1	1	NR		cracks
435	47	SI	spruce	39	4	>75	2	1	2	NR		crack, FB scar
437	47	SI	spruce	25	4	<50	2	1	1	NR		split at base, cracks, butt rot with cubical rotting pattern
443	47	SI	spruce	33	3	>75	2	1	1	Yes		FB scars, cracks
446	47	SI	balsam	17	3	>75	2	1	1	NR		
449	47	SI	balsam	20	3	>75	2	1	1	Yes		scars, small cracks
458	47	SI	balsam	52	4	<50	2	2	1	Yes		cracks, butt rot, FB scar, broken root
462	47	SI	balsam	25	4	<50	3	1	1	NR		some butt rot starting, cracks
466	47	SI	balsam	47	3	>75	2	1	2	Yes		FB scar, cracks
472	47	SI	balsam	41	3	>75	1	1	1	Yes		natural scar
476	47	SI	balsam	60	3	>75	1	2	1	NR		top broken off, large crack
484	47	SI	balsam	26	3	>75	2	1	1	NR		scars, cracks
489	47	SI	spruce	30	4	50-75	3	2	1	NR		canker, cracks
492	47	SI	spruce	31	4	>75	3	1	1	NR		cracks
495	47	SI	spruce	35	3	>75	2	1	1	Yes		cracks, broken roots
499	47	SI	spruce	51	4	>75	2	1	2	Yes		cracks
504	47	SI	balsam	17	3	50-75	1	1	1	NR		FB scar, cracks
509	47	SI	spruce	29	3	>75	2	1	1	NR		
511	47	SI	spruce	66	3	>75	1	2	1	Yes		
518	47	SI	balsam	19	3	>75	1	2	1	NR		cracks, FB scar
704	47	SI	balsam	27	3	<50	1	1	1	Yes		cracks, some butt rot starting, scar
716	47	SI	spruce	49	3	>75	2	1	2	NR		
721	47	SI	balsam	36	3	<50	2	1	1	Yes		
734	47	SI	balsam	48	3	<50	1	1	1	NR		cracks, a bit of butt rot

Tag	Block	Unit	Species	DBH	WTC	% bark	Root	HW	SW	Woodp. Feeding	Cavity Nests	Tree Defects
743	47	SI	spruce	60	4	>75	2	2	2	Yes		cracks
749	47	SI	balsam	39	3	<50	2	1	1	Yes		cracks, FB scars
756	47	SI	spruce	37	3	>75	1	2	1	NR		FB scar
761	47	SI	spruce	54	3	>75	2	1	1	Yes		scars
763	47	SI	spruce	41	3	>75	1	2	1	Yes		cankers, cracks
767	47	SI	balsam	40	4	<50	1	3	2	NR		some butt rot, cracks, FB scar
775	47	SI	spruce	62	4	>75	3	2	1	Yes		
782	47	SI	balsam	31	3	>75	2	1	1	Yes		cracks, scar at base
791	47	SI	balsam	34	3	50-75	1	1	1	Yes		
795	47	SI	balsam	31	3	>75	1	2	1	Yes		cracks, scar
799	47	SI	spruce	43	4	>75	2	2	2	Yes		conks/mushrooms growing at base, facing N
802	47	SI	spruce	46	4	>75	D	2	1	Yes		
805	47	SI	spruce	38	3	>75	2	1	1	NR		conks at base
813	47	SI	balsam	59	5	>75	3	3	1	NR		cracks, butt rot, FB scar
818	47	SI	balsam	30	3	>75	1	2	1	Yes		
822	47	SI	balsam	22	3	>75	1	1	1	NR		cracks
825	47	SI	spruce	26	3	>75	1	2	1	NR		
1004	46	SB	spruce	25	3	50-75	3	1	1	NR		cracks, splits
1009	46	SB	balsam	32	3	>75	3	1	1	Yes		scars at base
1014	46	SB	balsam	26	3	50-75	2	1	1	NR		narrow cracks, FB scar at top
1019	46	SB	pine	22	3	<50	2	1	1	NR		some narrow, thin cracks
1024	46	SB	balsam	26	3	>75	1	1	1	NR		FB scar at base
1029	46	SB	balsam	27	3	>75	2	1	1	Yes		long FB scar at top
1034	46	SB	pine	28	3	50-75	2	1	1	NR		FB scars and 2 natural scars
1039	46	SB		26	3	50-75	2	1	1	NR		FB scar at base, another at top
1044	46	SB	pine	22	4	<50	D	1	1	NR		lots of small cracks, butt rot
1049	46	SB	pine	19	3	>75	1	1	1	NR		lots of scars and pitch
1054	46	SB	balsam	30	3	<50	2	1	1	NR		butt rot, cracks
1059	46	SB	balsam	37	3	>75	2	1	1	NR		cracks
1064	46	SB	balsam	43	3	<50	2	1	1	NR		significant butt rot, cracks
1069	46	SI	balsam	36	3	>75	2	1	1	Yes		cracks, bark starting to slough

Tag	Block	Unit	Species	DBH	WTC	% bark	Root	HW	SW	Woodp. Feeding	Cavity Nests	Tree Defects
1074	46	SI		38	3	>75	2	1	1	Yes		
1079	46	SI	pine	29	3	50-75	1	1	1	NR		cracks
1084	46	SI	spruce	44	3	50-75	1	1	1	NR		cracks
1089	46	SI	spruce	34	3	<50	2	1	1	NR		butt rot, cracks
1094	46	SI	spruce	51	3	>75	1	2	2	NR		
1099	46	SI	pine	21	3	>75	2	1	1	Yes		
1104	46	SI	pine	20	3	>75	2	1	1	NR		cracks
1109	46	SI	balsam	17	3	>75	2	1	1	NR		canker, cracks
1114	46	SI	balsam	32	3	<50	2	1	1	NR		cracks
1119	46	SI	balsam	17	3	>75	2	1	1	NR		cracks
1124	46	SI	spruce	32	3	>75	1	1	1	NR		
1129	46	SI	spruce	50	3	>75	2	1	1	Yes		cracks
1134	46	SI	balsam	22	3	<50	1	1	1	NR		large crack
1139	46	SI	pine	50	3	50-75	1	1	1	NR		cracks, blind conks? (swellings), canker
1144	46	SI	spruce	38	3	>75	1	1	1	NR		cracks at base
1149	46	SI	spruce	43	3	>75	2	1	1	NR		cracks
1154	46	SI	pine	28	3	>75	2	1	1	NR		cracks, FB scar at base
1159	46	SI	pine	42	3	50-75	1	1	1	Yes		
1164	46	SI	pine	22	3	>75	2	1	1	NR		crack
1169	46	SI	balsam	41	3	>75	2	1	2	Yes		
1174	46	SI	spruce	35	3	>75	1	1	1	Yes		
1179	46	SI	spruce	40	4	>75	1	2	2	NR		conks at base, scars
1184	46	SI	balsam	28	4	50-75	2	1	1	NR	old cavity	
1189	46	SI	spruce	28	3	>75	1	1	1	NR		scar
1194	46	SI	balsam	19	3	50-75	1	1	2	Yes		cracks
1199	46	SI	balsam	46	4	50-75	3	D	1	Yes		butt rot, cracks
1204	46	SI		24	3	>75	2	1	2	NR		mushrooms growing at base
1209	46	SI	pine	42	3	>75	1	1	1	NR		crack with pitch, hole at base where branch broken off
1214	46	SI	pine	29	3	>75	2	1	2	Yes		
1219	46	SI	pine	20	3	>75	1	1	1	NR		
1224	46	SI	spruce	26	3	>75	1	2	2	NR		FB scar at top

Tag	Block	Unit	Species	DBH	WTC	% bark	Root	HW	SW	Woodp. Feeding	Cavity Nests	Tree Defects
1229	46	SI	pine	18	3	50-75	2	1	1	NR		crack
1234	46	SI	spruce	33	3	>75	2	2	1	NR		bulge at mid-stub with several pitch-filled scars
1239	46	SI	balsam	17	3	>75	1	1	1	NR		small FB scar at top, cracks
1244	46	SI	spruce	44	5	>75	3	1	2	NR		large crack/split
1254	46	SI	spruce	24	3	>75	1	1	2	NR		lean, cracks, broken roots
1259	46	SI	spruce	51	3	>75	2	2	1	Yes		wood splintering from top, cracks
1264	46	SI	balsam	33	3	<50	2	1	2	NR		cracks, butt rot, slight lean
1269	46	SI	balsam	23	3	>75	2	1	2	NR		cracks
1274	46	SI	balsam	16	3	>75	1	1	1	NR		several small scars
1279	46	SI	balsam	15	3	50-75	2	1	1	NR		cracks
1284	46	SI	balsam	20	3	>75	1	1	1	NR		small cracks at base
1289	46	SI	balsam	26	3	>75	2	1	1	Yes		cracks
1294	46	SI	balsam	25	3	>75	1	1	1	Yes		cracks
1299	46	SI	spruce	63	3	>75	1	2	1	Yes		large FB scars near base
1304	46	SI	spruce	33	3	50-75	2	1	1	Yes		FB basal scar, mycelium under bark, butt rot, cracks
1309	46	SI	spruce	33	3	>75	2	1	1	NR		cracks near base
1314	46	SI	spruce	27	3	>75	2	1	1	NR		
1319	46	SI	balsam	32	3	>75	2	2	1	Yes		butt rot, forked
1324	46	SI	balsam	29	3	>75	2	1	1	Yes		crack, FB scar at base
1329	46	SB	pine	33	3	>75	1	1	1	NR		cracks
1334	46	SB	spruce	31	3	>75	2	1	3	Yes		cracks
1339	46	SB	balsam	26	3	50-75	2	1	1	NR		cracks, FB scar
1344	46	SB	spruce	29	3	>75	2	1	1	NR		cracks
1349	46	SI	balsam	51	3	50-75	2	1	1	Yes	possible cavity start	cracks
1354	46	SI	spruce	46	3	>75	2	1	1	Yes		
1359	46	SI	balsam	44	3	<50	2	1	1	NR		cracks, some butt rot starting
1365	16	SI	balsam	17	3	>75	1	1	2	Yes		slight lean, FB scar, cracks
1370	16	SI	pine	34	3	<50	1	1	1	NR		cracks
1375	16	SI	balsam	29	3	>75	2	1	1	Yes		cracks
1380	16	SI	balsam	20	3	>75	1	1	1	NR		cracks
1391	16	SI	balsam	32	3	>75	2	1	1	Yes		FB scar

Tag	Block	Unit	Species	DBH	WTC	% bark	Root	HW	SW	Woodp. Feeding	Cavity Nests	Tree Defects
1395	16	SI	balsam	15	5	>75	3	3	1	Yes		conks
1400	16	SI	balsam	37	3	>75	2	1	2	NR		small FB scar
1415	16	SI	balsam	23	3	>75	2	1	2	Yes		FB scar, cracks
1425	16	SI	balsam	24	3	>75	2	1	2	Yes		cracks, FB scar at top
1445	16	SI	spruce	29	3	>75	2	1	1	NR		small cracks
1450	16	SI	balsam	26	4	50-75	3	1	2	Yes		
1455	16	SI	spruce	32	4	>75	2	2	2	Yes		
1465	16	SI	spruce	37	3	>75	1	1	2	Yes		FB scar
1470	16	SI	spruce	29	3	>75	2	1	1	NR		FB scar
1475	16	SI	spruce	34	4	>75	2	2	2	NR		FB scars
1480	16	SI	spruce	35	3	50-75	2	1	1	Yes		cracks, large FB scar
1485	16	SI	balsam	22	3	>75	2	1	1	Yes		cracks
1490	16	SI	balsam	22	3	>75	2	1	1	Yes		cracks, FB scar
1500	16	SI	spruce	26	3	>75	2	1	2	NR		FB scar
1505	16	SI	balsam	50	4	>75	2	1	2	Yes		FB scar
1510	16	SI	balsam	35	3	>75	2	1	2	Yes		cracks, FB scar
1515	16	SI	balsam	15	3	>75	2	1	2	NR		canker, scars
1520	16	SI	balsam	26	3	<50		1	1	NR		cracks, butt rot starting
1525	16	SI	spruce	37	3	>75	2	1	1	Yes		FB scar, cracks
1535	16	SI	balsam	31	5	<50	3	2	2	NR		canker, cracks, lean, FB scar, butt rot starting
1540	16	SI	balsam	15	3	>75		1	1	NR		cracks
1545	16	SI	balsam	22	3,4	<50	2	1	1	NR		cracks, lean
1550	16	SI	balsam	18	3	50-75	2	1	2	NR		FB scar, cracks, lots of pitch on scars
1555	16	SI	balsam	27	3	>75	2	1	1	Yes		
1560	16	SI	balsam	23	4	>75	2	2	2	Yes		cracks, small scars
1565	16	SI	balsam	37	3	>75	2	1	1	Yes		large cracks/scars, 1 from blowdown, lots of pitch
1570	16	SI	balsam	30	3	>75	2	1	1	NR		FB scar
1575	16	SI	balsam	18	3	>75	2	1	1	NR		FB scars
1580	16	SI	balsam	23	3	50-75	2	1	1	Yes		cracks
1585	16	SI	balsam	18	3	>75		2	1	NR		scars
1590	16	SI	spruce	35	3	>75	2	1	2	Yes		

Tag	Block	Unit	Species	DBH	WTC	% bark	Root	HW	SW	Woodp. Feeding	Cavity Nests	Tree Defects
1595	16	SI	balsam	20	4	>75	2	1	2	Yes		cracks
1600	16	SI	balsam	35	4	>75	3	1	2	Yes		FB scars
1605	16	SI	balsam	27	3,4	50-75	2	2	1	Yes		cracks
1610	16	SI	spruce	41	4	>75	2	2	2	NR		burnt base, big swelling (blind conk?)
1615	16	SI	spruce	43	3	50-75	1	2	1	Yes		canker-like scar
1620	16	SI	balsam	35	4	>75	2	1	2	Yes		cracks, FB scar
1625	16	SI	balsam	29	4	>75	2	1	2	Yes		
1630	16	SI	balsam	16	3	>75	2	1	1	Yes		FB scars
1635	16	SI	spruce	42	3	>75	2	1	1	NR		FB scar
1640	16	SI	spruce	38	5	<50	D	2	2	NR		FB scars, a lean, some butt rot starting, cracks
1645	16	SI	balsam	46	4	50-75	2	2	2	Yes		lots of cracks, FB scar
1650	16	SI	balsam	17	3	50-75	1	1	2	NR		FB scar, cracks with lots of pitch
1655	16	SI	spruce	64	3	>75	1	1	2	Yes		FB scars
1660	16	SI	pine	24	3	<50	2	1	1	NR		FB scar, small cracks
1665	16	SI	balsam	31	4	>75	2	2	2	Yes		FB scar
1670	16	TI	balsam	32	3	>75	2	1	1	Yes		small FB scars, cracks
1675	16	SI	pine	23	3	50-75	2	1	1	Yes		FB scar
1680	16	SI	balsam	35	5	50-75	D	2	2	Yes		FB scar, butt rot
1685	16	SI	balsam	26	3	<50	2	1	1	NR		lean, FB scars
1690	16	SI	balsam	20	3	<50	2	1	2	NR		FB scar, cracks, some butt rot starting
1695	16	SI	balsam	44	5	>75	3	2	2	Yes		FB scar, cracks
1700	16	SI	balsam	36	4	>75	2	1	2	Yes		FB scar, crack
1705	16	SI	spruce	38	3	>75	2	1	2	Yes		
1710	16	SI	balsam	35	4	50-75	3	1	1	Yes		butt rot, cracks, FB scar
1715	16	SI	balsam	26	3	50-75	2	1	1	Yes		FB scars, cracks
1720	16	SI	balsam	23	3	>75	1	1	1	Yes		FB scars, cracks
1725	16	SI	balsam	43	5	>75	3	2	2	Yes		butt rot, FB scar, cracks
1730	16	SI	balsam	39	5	50-75	2	2	3	Yes		FB scar, cracks, butt rot
1735	16	SI	balsam	28	4	<50	2	1	2	Yes		FB scars
1740	16	SI	balsam	39	4	<50	2	2	1	NR		large split
1745	16	SI	balsam	28	3	>75	2	1	1	Yes		cracks, splits

Tag	Block	Unit	Species	DBH	WTC	% bark	Root	HW	SW	Woodp. Feeding	Cavity Nests	Tree Defects
1750	16	SI	balsam	43	4	<50	2	1	2	Yes		butt rot, cracks
1755	16	SI	balsam	51	4	50-75	3	1	1	Yes		cracks, butt rot, split, FB scar
1760	16	SI	spruce	38	3	>75	2	1	2	Yes		FB scar
1765	16	SI	balsam	32	3	50-75	3	1	1	Yes		FB scar
1770	16	SI	balsam	24	4	<50	2	1	2	Yes		cracks, FB scar
1775	16	SI	balsam	35	5	50-75	3	2	2	Yes		butt rot starting, cracks
1780	16	SI	spruce	31	3	>75	2	1	2	Yes		FB scars
1785	16	SB	balsam	37	3	>75	2	2	1	Yes		scars
1790	16	SB	pine	32	3	<50	1	1	2	NR		FB scar, scar with lots of pitch
1795	16	SB	balsam	42	5	<50	2	3	2	Yes		butt rot, cracks, cubical brown rot
1800	16	SB	balsam	50	5	50-75	2	3	2	NR		severe rot, cracks
1805	16	SB	balsam	42	5	>75	2	D	2	NR		
1810	16	SB	balsam	36	4	>75	2	2	2	Yes		FB scar
1815	16	SB	spruce	62	3	>75	2	2	1	Yes		blind conks?, FB scar, cracks
1820	16	SB	balsam	46	4	<50	3	1	2	NR		cracks, splits, butt rot starting
1825	16	SI	spruce	46	5	50-75	3	D	2	Yes		split off from top
1830	16	SI	balsam	27	3	>75	2	1	1	Yes		scar, cracks
1835	16	SI	spruce	46	4	>75	2	2	2	Yes		FB scar
1840	16	SI	pine	33	5	>75	2	3	2	NR		FB scars
1845	16	SI	balsam	36	6	<50	3	3	3	NR	46NP11	butt rot, no bark (0%)
1850	16	SB	balsam	33	4	<50	2	2	1	NR		FB scar, cracks
1855	16	SB	balsam	32	4	50-75	3	1	1	NR		cracks, mycelial fans uncer bark
1860	16	SB	balsam	29	4	>75	3	2	1	NR		
1865	16	SB	balsam	35	3	>75	2	2	1	Yes		
1870	16	SB	balsam	45	4	>75	2	2	2	Yes		
1880	16	SB	spruce	30	4	>75	2	2	2	NR		
1885	16	SB	balsam	24	4	<50	2	2	2	NR		FB scars, mycelium under bark at base, butt rot
1890	16	SB	balsam	26	5	50-75	3	2	2	Yes		butt rot
1895	16	SB	balsam	58	4	<50	2	2	2	Yes		FB scars, butt rot
1900	16	SB	pine	44	4	>75	2	2	2	NR		cracks, FB scar
1905	16	SB	spruce	38	4	50-75	2	2	2	Yes		FB scar, cracks

Tag	Block	Unit	Species	DBH	WTC	% bark	Root	HW	SW	Woodp. Feeding	Cavity Nests	Tree Defects
1910	16	SB	balsam	40	4	>75	1	2	3	Yes		canker, cracks
1915	16	SB	balsam	30	3	>75	1	1	2	Yes		FB scar
1920	16	SB	balsam	47	4	>75	2	2	2	Yes		FB scar, cracks, butt rot starting
1925	16	SB	balsam	29	4	<50	2	2	2	NR		
1930	16	SB	balsam	19	3	>75	1	2	2	NR		cracks, FB scar
1935	16	SB	pine	20	3	50-75	1	2	2	NR		FB scars
1940	16	SB	pine	23	4	50-75	1	2	3	NR		FB scar
1945	16	SB	balsam	37	4	50-75	2	2	2	Yes		canker, cracks
1950	16	SB	balsam	33	3	>75	1	2	2	NR		crack
1955	16	SB	pine	15	4	50-75	3	1	1	NR		crack, FB scars
1960	16	SB	spruce	34	4	>75	2	2	2	Yes		FB scar
1965	16	SB	balsam	28	4	<50	3	1	2	Yes		cracks, butt rot starting
1970	16	SB	pine	35	4	>75	2	2	2	NR		cracks, canker
1975	16	SB	spruce	41	3	>75	1	2	2	Yes		crack
1980	16	SB	balsam	38	4	50-75	3	1	2	NR		cracks, butt rot
1985	16	SB	pine	31	4	>75	3	1	2	NR		cracks
1990	16	SB	balsam	38	4	<50	2	1	2	Yes		FB scar, cracks
1995	16	SB	pine	38	4	50-75	2	1	2	NR		FB scars, crack
2000	16	SB	balsam	45	4	>75	2	2	2	NR		scars
2005	16	SB	balsam	33	3	>75	2	1	2	Yes		FB scar
2010	16	SB	pine	26	3	<50	2	1	1	NR		cracks, FB scar
2015	16	SB	pine	35	4	>75	2	2	2	NR		scars with pitch
2020	16	SB	spruce	66	5	>75	3	3	2	Yes	cavity plus cavity start	FB scars
2025	16	SB	balsam	22	4	50-75	2	2	2	Yes		FB scar, cracks
2030	16	SB	spruce	57	5	50-75	3	2	2	Yes		butt rot
2035	16	SB	spruce	67	4	<50	2	2	2	NR		cracks, blind conk/burl?, butt rot, FB scar, lean
2040	16	SB	pine	30	3	>75	1	1	1	NR		scar
2045	16	SB	pine	35	5	>75	3	2	3	NR		
2050	16	SB	pine	33	3	50-75	1	1	1	NR		cracks, FB scar/split at top
2055	16	SB	spruce	51	3	>75	1	1	1	Yes		a "double" tree - forks near base
2060	16	SB	balsam	39	4	50-75	2	1	2	Yes		butt rot, cracks, FB scar

Tag	Block	Unit	Species	DBH	WTC	% bark	Root	HW	SW	Woodp. Feeding	Cavity Nests	Tree Defects
2065	16	SB	spruce	37	3	>75	1	2	1	Yes		FB scars
2070	16	SB	balsam	26	4	50-75	2	2	2	Yes		FB scars, cracks
2075	16	SB	spruce	33	4	50-75	2	2	2	Yes	16NP01	FB scar
2080	16	SB	pine	39	4	50-75	2	2	1	Yes		
2085	16	SB	balsam	22	3	>75		1	1	Yes		FB scar, crack
2090	16	SB	pine	29	3	50-75	2	1	1	NR		cracks, mycelium under bark
2095	16	SB	pine	31	3	50-75	2	1	1	NR		canker-like scar, cracks
2100	16	SB	balsam	37	3	>75	2	1	2	Yes		FB scars
2105	16	SB	balsam	25	3	<50	1	1	1	NR		
2110	16	SB	balsam	51	3	>75	1	2	1	Yes		
2115	16	SB	pine	37	5	<50	3	1	2	Yes		FB scar, butt rot
2120	16	SB	balsam	29	3	>75	1	1	1	Yes		FB scar, crack
NN-318	47	SI	spruce	30	3	>75	2	1	1	NR		FB scar